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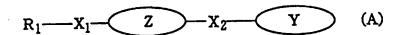
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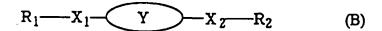
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(54) Fluorescent liquid crystalline charge transfer materials

(57) The present invention relates to novel charge transfer materials which have both the advantageous properties of amorphous materials such as structural flexibility and uniformity over large areas, and those of crystalline materials such as molecular orientation and which are excellent in charge transferability, thin-film formability, and durability of various types. The liquid crystalline charge transfer materials have the following structure (A) containing a fluorescent skeletal structure Y, and the core Z of a liquid crystal:

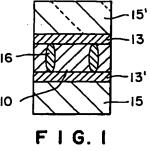


in which R_1 , which may directly be combined with Z without interposing X_1 , represents a saturated or unsaturated, and linear, branched or cyclic hydrocarbon group having 1 to 22 carbon atoms; and X_1 and X_2 represent oxygen atom, sulfur atom, or -CO-, -CCO-, -COO-, -N=CH-, -CONH-, -NH-, -NHCO- or -CH₂- group; or



in which R_1 and R_2 , which may directly be combined with Y without interposing X_1 and X_2 , each represent a saturated or unsaturated, and linear, branched or cyclic hydrocarbon group having 1 to 22 carbon atoms; and X_1 and X_2 represent oxygen atom, sulfur atom, or -CO-, -CCO-, -COO-, -N=CH-, -CONH-, -NHCO- or - CH₂- group.

EP 0 915 144 A1



Description

[0001] The present invention relates to fluorescent liquid crystalline charge transfer materials. More particularly, the present invention relates to liquid crystalline organic materials having fluorescence and charge transferability, and to various elements or devices using these organic materials.

[0002] As charge transfer materials, there have conventionally been known those materials which are obtained by dissolving or dispersing charge transfer molecules, which will become charge transfer sites, in matrix materials such as polycarbonate resins; and those materials such as polyvinyl carbazole which have polymer backbones and charge transfer molecular structures as pendants to the backbones. These materials have widely been used for producing photoconductors for use in copying machines, printers, and the like.

[0003] In the case of the dispersion-type charge transfer materials in the above-described conventional charge transfer materials, it is desirable for improving charge transferability that charge transfer molecules be highly soluble in a matrix polymer. Practically, however, charge transfer molecules are crystallized in a matrix when the concentration of the charge transfer molecules in the matrix is made high. Therefore, the concentration of charge transfer molecules in a matrix is, in general, limited to 20 to 50% by weight although it depends on the type of the charge transfer molecules. Consequently, the amount of the matrix having no charge transferability becomes 50% by weight or more of the whole material; and, when such a material is made into a film, the sufficiently high charge transferability and speed of response of the charge transfer molecules are restricted by the matrix.

[0004] On the other hand, in the case of charge transfer polymers of the above-described pendant type, although the proportion of pendants-having charge transferability is high, the polymers have many practical problems in film formability, and also in mechanical strength, environmental stability and durability when they are made into films. Further, in the charge transfer materials of this type, the charge transfer pendants are locally in close proximity. Such locally close pendants become stable sites when hopping of electric charges is conducted, and act as a land of traps. Consequently, the mobility of electric charges is lowered.

[0005] Furthermore, the features of the above-described amorphous materials, viewed from electrical characteristics are different from those of crystalline materials; and the amorphous materials have such a problem that hopping sites have fluctuation in terms of not only space but also energy. For this reason, the mobility of electric charges in the amorphous materials is highly dependent on the concentration of charge transfer sites; and it is generally from about 10⁻⁵ to 10⁻⁵ cm²/vs. This value is much smaller than the mobility of electric charges in molecular crystals, which is in the range of 0.1 to 1 cm²/vs. Moreover, there is such a problem that the charge transferability is highly dependent on both temperature and electric field strength. This is the great difference between the amorphous charge transfer materials and crystalline ones.

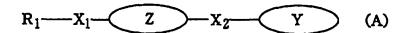
[0006] In addition, for such applications that require charge transfer layers having large areas, polycrystalline charge transfer materials are anticipated because they can uniformly be made into charge transfer films having large areas. However, polycrystalline materials are essentially unhomogeneous from the microscopical point of view. They have therefore some problems; for example, it is necessary to suppress those defects which will be formed on particle-particle interfaces.

[0007] An object of the present invention is therefore to solve the aforementioned problems in the prior art, thereby providing novel charge transfer materials which have both the advantageous properties of amorphous materials such as structural flexibility and uniformity over large areas, and those of crystalline materials such as molecular orientation and which are excellent in charge transferability, thin-film formability, and durability of various types.

[0008] Further, we also found that some of the above-described novel charge transfer materials themselves are fluorescent. When a display element such as an electro-luminescent element is composed by using such a charge transfer material, it is not necessary to introduce any fluorescent material which tends to impede the orientation of molecules in a liquid crystal. Therefore, the present invention also provides charge transfer materials which are free from lowering of charge transferability, which do not change the nature of liquid crystals and which can attain high mobility of electric charges.

[0009] Furthermore, the liquid crystalline materials of the present invention have both charge transferability and fluorescence. Therefore, when they are used, for example, as electro-luminescent elements, the electro-luminescent elements can be produced by using only the liquid crystalline materials, and the production process of the elements can thus be simplified, although it is necessary, for composing conventional electro-luminescent elements, to use two or three layers of an electron transfer layer; a hole transfer layer and a luminescent layer respectively made from materials having electron transferability, hole transferability or fluorescence.

[0010] The above-described object is attained by the present invention which will be described hereinafter. Namely, a first embodiment of the present invention is a liquid crystalline charge transfer material having the following structure (A) containing a fluorescent skeletal structure Y, and the core Z of a liquid crystal:



wherein R_1 , which may directly be combined with Z without interposing X_1 . represents a saturated or unsaturated, and linear, branched or cyclic hydrocarbon group having 1 to 22 carbon atoms; and X_1 and X_2 represent oxygen atom, sulfur atom, or -CO-, -COO-, -N=CH-, -CONH-, -NH-CO- or -CH₂- group.

[0011] A second embodiment of the present invention is a liquid crystalline charge transfer material having the following skeletal structure (B) containing the fluorescent core Y of a liquid crystal:

$$R_1 - X_1 - Y - X_2 - R_2$$
 (B)

wherein R₁ and R₂, which may directly be combined with Y without interposing X₁ and X₂, each represent a saturated or unsaturated, and linear, branched or cyclic hydrocarbon group having 1 to 22 carbon atoms; and X₁ and X₂ represent oxygen atom, sulfur atom, or -CO-, -COO-, -N=CH-, -CONH-, -NH-, -NHCO- or - CH₂- group.

[0012] Liquid crystalline molecules have self-orienting property due to their structures. Therefore, in the case of charge transfer in which liquid crystalline molecules are used as hopping sites, scattering of hopping sites in terms of both space and energy is prevented unlike in the case of charge transfer utilizing the previously-mentioned molecule-dispersed materials, and band-like charge transfer which can be seen in molecular liquid crystals is thus attained. For this reason, the liquid crystalline molecules can attain extremely high mobility of electric charges as compared with the conventional molecule-dispersed materials; and, moreover, the mobility is not dependent on electric field. In addition, by introducing fluorescent skeletal structures to the above-described liquid crystalline molecules having self-orienting property, there can be obtained liquid crystalline charge transfer materials whose self-orienting property is not adversely affected by the addition of fluorescent materials.

[0013] In the drawings,

Fig. 1 is a schematic view showing an electro-luminescent element;

Fig. 2 is a schematic view showing an electro-luminescent element (an example of electrode pattern);

Fig. 3 is a schematic view showing an electro-luminescent element;

Fig. 4 is a schematic view showing an electro-luminescent element;

Fig. 5 is a schematic view showing an optical sensor;

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Fig. 6 is a schematic view showing an optical sensor;

Fig. 7 is a schematic view showing an optical sensor;

Fig. 8 is a schematic view showing an image-displaying element;

Fig. 9 is a schematic view showing an image-recording device;

Fig. 10 is a schematic view showing an image-recording device;

Fig. 11 is a schematic view showing a spacial optical modulator; and

Fig. 12 is a schematic view showing a thin-film transistor.

[0014] By showing preferable embodiments of the present invention, the present invention will be described more specifically.

[0015] Liquid crystalline charge transfer materials of the present invention will be enumerated below. Among the following charge transfer materials, preferable ones are those liquid crystalline charge transfer materials which fulfill the previously-mentioned requirements, and, at the same time, have the core $(6\pi \text{ electron system aromatic ring})_n$ ($(10\pi \text{ electron system aromatic ring})_m$ or $(14\pi \text{ electron system aromatic ring})_n$ (where I, m and n are an integer of 0 to 4, provided that I + m + n = 1 to 4), the $6\pi \text{ electron system aromatic ring}$ being combined through a combining group having carbon-carbon double bond or carbon-carbon triple bond. The number of the aromatic rings combined are restricted by taking mobility of electric charges into consideration. Examples of $6\pi \text{ electron system aromatic rings include benzene, pyridine, pyrimidine, pyridazine, pyrazine and tropolone rings; examples of <math>10\pi \text{ electron system aromatic rings include naphthalene, azulene, benzofuran, indole, indazole, berizothiazole, benzoxazole, benzimidazole, quinoline, isoquinoline, quinazoline and quinoxaline rings; and <math>14\pi \text{ electron system aromatic rings include phenanthrene and anthracene}$

rings. It has been known that these π electron system aromatic rings show fluorescence when voltage or light is applied thereto. Those charge transfer materials which are preferably used in the present invention have structures combined with these π electron system aromatic rings, so that they are more preferable from the viewpoint of fluorescence.

L	
<u> </u>	<u></u> /

{L	R	ja	i LCI
C3H11-	-CO-NH-NH-CO-CH2-CN	K 124	S 141 I
CeHto	-CO-NH-NH-CO-CH2-CN	K 121	S 162 1
C7H15-	-00-NH-NH-CO-CH2-CN	K 125	S 184 I
CaHir	-00-141-141-00-CH2-CN	K 130	S 178 I
C4HP-O-	-CO-NH-NH-CO-CH ₂ -CN	K 141	8 130 1
CHITCH	-CO-WH-WH-CO-CH4-CM	K 138	\$ 1491
CeH13-O-	-CO-NH-NH-CO-CH2-CN	K 133	S 167 I
C7H15-O-	-00-NH-NH-00-CH2-CN	K 134	S 178 I
C0H17-O-	-CO-NH-NH-CO-CH ₂ -CN	K 131	S 188 I
CoH19-O-	-CH=CH-CO-NH-NH-CO-CH2-CN	K 142	S 215 I

 $L \longrightarrow R$

$$L \longrightarrow R$$

10	[L	R	Cr	l LCI
	C6H15	-O-C ₄ H ₉	K 26	\$44.51
	CoH ₁₇	-O-C ₆ H ₁₃	K 57	137 C 58 A 79 I
	CeH ₁₇	-O-C ₀ H ₁₇	K 22	S 37 G 51 F 62 C 77 A 85 I
	CaHty	-00C-C ₈ H ₁₁	K 64	C 69 N 70 I
15	CeH17-	-00C-C ₆ H ₁₃	K 51	· C771
	C ₈ H ₁₇ -	-00C-C7H15	K 41	F77 C 85 I
	C ₈ H ₁₇ -	-00C-C ₆ H ₁₇	K 58	G 48 F 85 C 88 I
	C.H17-	-00C-C ₀ H ₁₀	K 36	G 60 F 92 I
20	CeH17	-00C-C ₁₀ H ₂₁	K 13	G 66 F 93 !
20	CeH17	-00C-C ₁₁ H ₂₃	K 26	G 43 F 96 I
	C4H4-O-	-C ₄ H ₀	K 43	· 5821
	C4HF-O-	-CeH13	K 50	S 54 N 81 I
	C4Hg-O-	-C ₈ H ₁₇	K 33	B 57.3 C 66.8 A 69.4 I
25	C5H11-O-	-CeH ₁₃	K 20.5	H 31.5 G 45 F 48.5 C 58 N 60.8 I
25	C3H11-O-	-C7H15	K 26.5	G 35 F 48 C 67.5 N 68.7 I
	C5H11-O-	-CeH ₁₇	K 37.4	B 52 C 70.1 !
	C ₅ H ₁₁ -O-	-C ₂ H ₁₈	K 42.5	B 65 C 72.4 A 74.5 I
	C3H11-O-	-C ₁₉ H ₂₁	K 44.4	B 66.7 C 70.4 A 74.7 I
30	CeH13-O-	-C ₃ H ₇	K 50	\$721
00	C ₆ H ₁₃ -C-	-C ₆ H ₁₃	K 22	C 66 N 69 B
	CeH13-C-	-C7H15	K 34	H 31.2 G 44.4 F 53 C 74.4 N 75.2 I
	C6H15-O-	-C ₀ H ₁₇	K 30	G 23 58 C 77
	CeH13-C-	-C ₉ H ₁₉	K 36	. B 64.4 C 80.5 I
35	C ₆ H ₁₃ -O-	-C ₁₀ H ₂₁	K 30	8 67.6 C 80 I
	C7H15-O-	-C ₆ H ₁₁	K 56.9	S 61.8 N 68.2 1
	C7H15-O-	-C ₆ H ₁₃	K 40	C 68 B
	C7H15-C-	-C ₇ H ₁₃	K 31	G 40152 C 77 I
	C7H15-O-	-C ₈ H ₁₇	K 38.5	F 56 C 76.5 I
40	C7H15-C-	-C ₉ H ₁₉	K 33	B 64 C 81.5 I
	C7H15-O-	-C ₁₀ H ₂₁	K41	B 67.8 C 80.8 I

Cr

-CO-C4H9

-CO-C3H11

-CO-C₆H₁₃

-CO-C7H15

-00C-C3H11

-00C-C₆H₁₃

-00C-C7H15

-00C-C9H19

K 130

K 149

K 140

K 109

K 72

K 57

K 88

K 148.5

A 119 I

A 123 I

E 83 A 127 I

E 92 A 126 I

E 73 A 107 I

E 55 A 117 I

E 64 A 104 !

A 120 I

A 118 Î

A 118 I

S 119 I

S 1171

S 113 I

S 109 I

A 164 I

A 168 I

A 167 I

A 117 B

A 126 B

X 105 A 119 B

X 83 X 93 A 123 B

-S 125 (

S 101 S 123 I

S 93 S 122 I

E 108 A 157 I

 $L \longrightarrow R$

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-CO-C7H15 C3H7 K 116 -CO-C₆H₁₂ K 114 CoHo--CO-C₃H₁₁ K 107 C5H11-15 -CO-CaHa K 92 CoH13--CO-C3H7 K 75 C7H15--CO-C₂H₅ K 80 CHIT -CO-C₂H₃ CeH1e-K 75 C9H19--CO-C3H7 K74 20 CeHier -CO-C1H9 X71 CgH1g--CO-C₂H₁₁ K 98 -O-CaH12 K 114 C9H13-O--O-C₇H₁₅ C7H15-O-K 99 -O-CeH17 C.H17-0-K 90 25 CoH19-O--O-C₀H₁₉ K 83 C10H21-O--O-C10H21 K 94 -0-C11H23 C11H25-O-K 98 C12H25-O--O-C12H25 K 99

C4Hg-CO-

C2H11-CO-

C6H13-CO-

C7H15-CO-

C3H11-COO-

C9H13-COO-

C7H15-COO-

C9H19-COO-

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10	IL	i R	i	Cr	[L
	C3H11-O-	C7H15	_	K 78	A731
	C ₆ H ₁₅ -O-	-C ₀ H ₁₃		K79.	A741
	C ₀ H ₁ -C-	-C ₇ H ₁₅		K 83	A 821
15	C7H15-O-	-C ₆ H ₁₁		K 72	C74A791
15	C7H15-O-	-C ₄ H ₁₃		K74	C811
	C7H15-O-	-C ₇ H ₁₅		K79	C 89 1
	C7H15-O-	-C ₆ H ₁₇		K70	C 851
	CH15-O-	-CeHte		K77	C 89 1
20	C7H15-O-	-C ₁₀ H ₂₁	١	K 75	C 86 1
20	C ₆ H ₁₇ -O-	-C ₅ H ₁₁		K 73	C 69 A 81 I
	CaH1-O-	-CeHts		K 73	C80 A 83 I
	C4H17-O-	-C7H1s		K 80	C 87 I
	CoH17-O-	-CeH ₁₇		K 80	C 90 I
25	CoH17-O-	-CoHta		K 77	· · C901
	C ₆ H ₁₇ -O-	-CtoHat	П	K78 -	. G70 C901
	C ₀ H ₁₀ -O-	-C3H11		K 69	G 53 C 86 A 821
	CoH19-O-	-CeH13		K 62	G 61 C 81 A 83 I
	C ₂ H ₁₉ -O-	-C7H15		K 72	C 87 1
30	CaH1g-C-	· -C ₉ H ₁₉		K 76	C 90 I
	C ₁₀ H ₂₁ -O-	-C ₃ H ₁₁		K 73	F 55 C 57 A 84 I
	C10H21-O-	-C ₆ H ₁₃	J	K 50.6	S 65.4 C 81.1 A 85.41
	C10H21-O-	-C ₇ H ₁₅		K 70	C 89 I
	C ₁₀ H ₂₁ -O-	-CoH19		K 79	C 92 I
35	C ₄ H _g -CMe ₂ -C ₄ H _g -O-	-C7H15		K 49	C331
	C ₄ H ₈ -CMe ₂ -C ₆ H ₁₂ -O-	-C7H15	١	K 54	C 55 I
	C7H15-COO-	-C ₇ H ₁₅		K 79	B 68 A 73 I
	C8H17-COO-	-C ₀ H ₁₉	Į	K 85	C 84.51
	C ₁₁ H ₂₂ -COO-	-C ₁₁ H ₂₃		K 88	B 85 I
40	CeH17-O-	-CHMa-C ₂ H ₃	1	K 52	A 191
	C ₇ H ₁₅ -	-C4H8-CHM9-C2H5	s	K 42.6	C* 27.5 A 34 I

10	L	A	Cr	ادا
	CeH13-O-	-CH=CH-CH2-O-CH3	K 16	8 30 N 38 I
	C7H15-O-	-CH=CH-CH2-O-CH3	K14	8 38 1
	CH3-CO-	-C ₃ H ₇	K 45	\$ 541
	C*H*-CO-	-C ₂ H ₁₁	K 60.7	B 52.5 N 58 I
15	C ₄ H ₂ -CO-	-C7H15	K 56.5	A 50.5 N 64.3 I
	C4H12-CO-	-C ₇ H ₁₅	K 70	B71.51
	CeH17-CO-	-C7H1S	K 70.2	E 43 B 80.1 I
	C3H7-CF2-CO-	-C ₄ H ₁₁	K 20	. B 33 N 53.9 I
	CH3-NH-CH%CH-CO-	-C ₄ H ₁₃	K 107.8	A 144.3 N 153 I
20	C3H3-NH-CH%CH-CO-	-C ₆ H ₁₃	K.68.4	A 76.8 N 120 I
	C6H13-NH-CH%CH-CO-	-C ₆ H ₁₃	K 61	C 35 N 104.2 I
	C7H15-NH-CH%CH-CO-	-C ₀ H ₁₃	K 55.2	H 40 C 58.9 N 107.8 I
7.47	CeH17-NH-CH%CH-CO-	-CeH13	K 50.8	H 57.8 C 80.3 N 104 I
	C9H19-NH-CH%CH-CO-	-C ₆ H ₁₃	K54	H 74.6 C 94.1 N 107.3 I
25	C10H21-NH-CH%CH-CO-	-C ₆ H ₁₃	K 61.3	H 83.3 C 100.1 N 105.2 I
	C11H22-NH-CH%CH-CO-	-C ₄ H ₁₃	K 68.7	H 94.3 C 106.6 N 109.3 I
	C12H25-NH-CH%CH-CO-	-C ₄ H ₁₃	K 64.1	H 97.8 C 109 N 109.4 I
	C ₁₃ H ₂₇ -NH-CH%CH-CO-	-C ₆ H ₁₃	K 65	H 103.2 C 111.4 I
	C14H29-NH-CH%CH-CO-	-C ₆ H ₁₃	K 55	H 102.1 C 109.8 I
30	C15H31-NH-CH%CH-CO-	-CaH ₁₃	K 54.2	H 106.1 C 110.6 I
	C18H37-NH-CH%CH-CO-	-C ₄ H ₁₃	K 54.1	H 107.41
	C4H8-OOC-	-CsH ₁₁	K 11	A-4N-3.21
	C₃H-COO-	-C ₃ H ₇	K 11	B 26.1 N 30.3 I
	C4H9-COO-	-CaH7	K 32.3	B 42.7 I
35	C3H11-COO-	-C7H15	K34.2	B 64.5 I
	C ₈ H ₁₇ -O-	-OOC-CH2-CHMe-C3H6-CHMe-CH3 S	K 53	B 39 I
	C ₁₀ H ₂₁ -O-	-00C-CHF-C4H9 S	K 42.5	6 41 (
	C9H11-COO-	-00C-CHF-C4H9 R	K 42	. B 59 I
	C6H13-COO-	-00C-CHF-C,H ₀ R	K 52	B 59 (
40	C7H15-COO-	-OOC-CHF-C ₄ H ₆ R	K 42	B 64 I

 $L \longrightarrow R$

10				
	{L	I A	Cr	LC
	C ₂ H ₅ -O-	-CN	K 150	S 144 N 189 I
	CeH17	-C ₆ H ₁₃	K 68	C 106 N 116 I
	C ₅ H ₁₁ -	-Ö-CaHa	K77	S 76 N 118 I
15	C5H11-O-	-C ₃ H ₁₁	K73	C77 N 118 I
	C ₅ H ₁₁ -O-	-CeH ₁₂	K73	C 88 N 114 I
	C ₅ H ₁₁ -O-	-C7H1s	K71	C 96 A 98 N 118 I
	C ₅ H ₁₁ -O-	-C ₀ H ₁₇	K73	C 92 A 105 N 112 I
	C ₆ H ₁₅ -O-	-C ₅ H ₁₁	K 68	C 93 N 125 I
20	C ₆ H ₁₂ -O-	-CeH ₁₃	K 68	C 98 N 117 I
	C ₆ H ₁₃ -O-	-C ₇ H ₁₅	K 65	C 104 A 106 N 121 I
	C _e H ₁₂ -O-	-C ₂ H ₁₇	K 69	C 104 A 113 N 117 I
	C7H15-O-	-C ₅ H ₁₁	K73	C 98 N 121 I
	C7H16-O-	-C ₆ H ₁₃	K70	C 105 N 1161
25	C7H15-O-	C7H15	K70	C 109 A 113 N 120 I
	C7H15-O-	-C ₆ H ₁₇	K71	C 109 A 115 N 116 I
	C ₄ H ₁₇ -O-	-C ₅ H ₁₁	K72	C 104 N 120 I
	C ₂ H ₁₇ -O-	-C ₆ H ₁₃	K 68	C 106 N 116 I
	C ₈ H ₁₇ -O-	-C7H15	K70	C 109 A 117 N 120 I
30	C ₆ H ₁₇ -O-	-CeH17	K 69	C 113 A 118 I
	CgH1g-O-	-C ₃ H ₁₁	K76	C 107 A 109 N 118 I
	C ₉ H ₁₉ -O-	-C ₆ H ₁₃	K 76	C 111 A 113 N 116 I
	C ₉ H ₁₉ -O-	-C7H15	K 76	C 113 A 119 I
	C9H19-O-	-C ₈ H ₁₇	K 75	C 114 A 117 I
35	C10H21-O-	-C ₅ H ₁₁	K77	C 107 A 113 N 118 I
	C10H21-O-	-C ₆ H ₁₃] -	K 75	C 110 A 114 N 116 I
	C10H21-O-	-C ₇ H ₁₅	K 74	C 114 A 119 I
	C ₁₀ H ₂₁ -O-	-C ₈ H ₁₇	K 68	C 114 A 116 1
	C ₁₁ H ₂₂ -O-	-C ₅ H ₁₁	K 83	C 105 A 114 N 116 I
40	C11H25-O-	-C ₆ H ₁₃	K 82	C 110 A 115 I
	Ç11H22-O-	-C ₇ H ₁₅	K81 .	C 113 A 118 I

1	L—	R
		N R

L	R	Cr	[
C7H15	-CN	K 125.6	S 154.1 N 163.7 I
CeH17-O-	-O-C ₀ H ₁₇	K 93	C 105 A 111 N 129 I
CeH17-C-	-0-CH2-CH0/CH(t)-C4H4	S K 85	C" 128.4 A 130.5 N° 141 I

 $L \longrightarrow \mathbb{R}$

	<u>jr </u>	j Rj	Cr	ıcı
	NC-	-O-C ₅ H ₇₀ -SiMeCl ₂	K 119.4	S 191.41
	C10H21-O-	41	K 106.8	B941
15	C7H13"	-CN	K 61.5	\$ 73.5 N 98 I
	Cellin	-CN	K 52	S 57.5 A 80 N 89 B
	CoH ₁₀	-cn	K 56.2	A 94.4 N 96.7 I
	C ₁₀ H ₂₁ -	-01	K 472	A 95.1 I
	C ₁₁ H ₂₃ -	-CN	K 65.5	A 100.21
20	C7H15-O-	-CN	K 80	A 80.5 N 126 B
	CH17-O-	· -CN	K 103	A 110 N 128 B
	C10H21-O-	-CN	K 87	A 129 B
	C ₁₇ H ₃₆ -CONH- · ·	-CN	K 144	\$ 159
	C ₂ H ₆ -CHMe-C ₄ H ₆ -	-CN	1 K 59.4	S 67.21
25	C2H6-CHM6-C6H10-	-CN	1 K44.7	5 68.31
	C ₇ H ₁₈ -O-	-NO ₂	K77.5	A 94 N 106.5 B
	C ₆ H ₁₇ -O-	-NO ₂	K111	A 111 N 1141
	G ₁₀ H ₂₁ -O-	-NO ₂	K 97	A 1161
	C ₁₂ H ₂₅ -O-	-NO ₂	K 85	A 1151
30	C ₁₂ H ₂₅ -NH-	-NO ₂	K 109	E 141
	C ₁₈ H _{S7} -NH-	-NO ₂	K 1121	E 132 I
	C ₁₇ H ₃₆ -CONH-	-NO ₂	K 139	A 160 B
	C ₀ H ₁₇ -	-CaH177	K 46	H 106 G 108 I
35	CoHier	-CoH19	K41	H 93 G 109 I
35	C ₁₀ H ₂₁ -	-C ₁₀ H ₂₁	K 64	H 92 G 106 I
	C ₁₁ H ₂₂	-C11H23	K 61	S 70 H 85 G 106 I
	C ₁₂ H ₂₅ -	-C ₁₂ H ₂₅	K 75	S 77 H 81 G 103 I
	C ₅ H ₁₁ -	-0-CH ₂	K 118	B 109.8 N 124.7 I
40	C ₅ H ₁₇ -	-O-C ₉ H ₁₇	K 121.3	S 121.1 S 125.5 S 131 I
₩.	CH-C-	-O-C ₂ H ₁₉	K 149	S 142.5 N 142.6
	CH2-O-	O-C12H25	K 142	S 1361
	CH2-O-	-O-C14H28	K 139	S 132 1

$$L \longrightarrow 0$$
 R

	L	R	Cr	LCI
	Cellige	-O-C ₇ H ₁₅	K 48	C41 N 61 I
	Cellier	-O-C ₀ H ₁₇	K 53	C 48 N 64 I
	Cellis"	-O-C ₀ H ₁₉	K 54	C 52 N 63 I
15	CeHte-	O-C ₁₀ H ₂₁	K 58.7	C 57.9 N 65.8 I
	Celtier	O-C ₁₂ H ₂₅	K 62.1	B 47.5 C 63.1 A 63.8 N 66.51
	Celtier	-O-C ₁₄ H ₂₉	K 63.7	B 55.7 C 65.4 A 66.81
	CeHter	-O-C ₁₈ H ₂₃	K 69.4	B 61.3 C 66.4 A 67.5 I
20	C10H210	-O-C ₆ H ₁₁	K 52.5	A 42.4 N 52.5 I
20	Cnotter-	-O-C ₆ H ₁₈	K 44.1	B 33.6 A 47.7 N 501
	C10H21-	-O-C ₇ H ₁₅	K 52.8	B 38.2 C 40.8 A 51.7 N 58.7 I
	C ₁₀ H ₂₁ -		K 55.2	B 40.5 C 52.4 A 55.9 N 62.5 1
	C10H21-	-O-C ₁₀ H ₂₁	K 51.4	B 45.9 C 60.5 A 62.1 N 64.5 I
25	C ₁₀ H ₂₁ -	-O-C ₁₂ H ₂₅	K 64.5	B 51 C 64.1 A 65.7 I
25	C10H21-	-O-C ₁₄ H ₂₈	K 65.2	B 58.1 C 66.7 I
	C ₁₀ H ₂₁ -	-O-C10H22	K 57.2	B 64.2 C 69.6 I
	C12H25-	-O-C ₁₉ H ₂₂	K73.7	B 68.9 C 71 I
	CeH13"	-CO-C ₄ H ₀	K 80	A761
30	CeH13-	-co-c ₆ H ₁₁	K 91.6	A 80,41
•	Cellis	-co-c ₇ H ₁₈	K 91.4	A 85.8 i
	CoHist	-co-c ₅ H ₁₁	K 88.7	A 88.5 I
	C10H21-	-co-c ₄ H _e	K 81.4	A 87.3 I
	C10H21-	-CO-C ₆ H ₁₁	K 57.8	1 E.E. A
35	C10H21-	-CO-C7H15	K 97.1	I CS A
	CaHar	-CO-CH2-OOC-C3H7	K 80.2	S 90.4 N 95,61
	C10H21-	-00C-C7H15	K 69	C 81.7 N 70.41
	1	1 1	1	1

-CoH13

-C.H17

-C₀H₁₉

-C10H21

-C12H25

K 43.7

K 43.6

K 38,3

K 81.2

K 51

A 36.7 N 59.6 I

A 42.1 N 51.8 I

A 51.4 N 62.2 I

A 49 N 62 I

C 26.1 A 40 N 85.2 I

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C4H13-O-

CPH12-O-

CoH15-O-

CoH15-C-

CaH13-O-

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 $L \longrightarrow N \longrightarrow R$

1	n	
•	v	

	<u>L</u>	R		[Cr	LCI
	CaHy-O-	-CH ₃	Γ	K 65	G 45 N 72 I
	CH-O-	-C ₂ H ₅		K 40.5	G 51 N 65.51
15	C+H+O-	-C ₄ H ₀		K8	G 41 B 45 A 45.5 N 75 I
	C4Ha-O-	-CeH11		K 28	S 30 S 41.5 A 44.4 N 84.6 I
	C4HP-O-	-CeH ₁₃		K 26	B 47.9 A 54.7 N 78.9 I
	C4H2-O-	-C7H15		K 20	S 29 B 48.8 A 56.6 N 83.3 I
	C4H#-O-	-C ₈ H ₅₇		K 33	B 49.5 A 64.5 N 79 I
20	C4Hg-O-	-C ₀ H ₁₉		K7	B 48 A 64.7 N 80.21
	C4M-O-	-C ₁₀ H ₂₁		K 44.3	- 8 48.8 A 64.7 N 76.7 I
	C*H*O-	-C ₁₂ H ₂₅	1	K 37.5	G 45.6 B 52.5 A 69.4 N 78.7 I
	C3H11-O-	-CH ₃		K 55	G 44 N 70.51
	C5H11-O-	-C ₂ H ₅	1	K 49.2	G 54.2 N 59 I
25	C ₆ H ₁₁ -C ₇	-C ₃ H ₇		K 24	A 58 N 77.7 B
	C ₆ H ₁₁ -O-	-C ₄ H ₉		K 20	G 51.9 A 52.4 N 69.2 i
	CoH11-C-	-C ₆ H ₁₁		K 28	G 46.1 B 48 C 52 A 53 N 77.5 I
	C ₂ H ₁₁ -O-	-CeH13		K 34.5	G 41 F 44.3 B 51.6 C 53 A 61.1 N 72.9 I
	C ₅ H ₁₁ -O-	-C ₇ H ₁₅	1	K 29.5	G 33.9 B 51 C 53.1 A 62.8 N 78 I
30	C3H11-C-	· -C ₆ H ₁₇		K 43.2	G 26.2 B 53.7 A 67.8 N 75.1 I
	C3H11-O-	-C ₀ H ₁₉		K 7	B 52.9 A 68.7 N 76.7 I
	C3H11-O-	-C ₁₀ H ₂₁	l	K 41	B 54 A 67 N 78.21
	C ₆ H ₁₁ -O-	-C ₁₁ H ₂₃		K?	B 53 A 70.4 N 75.1 I
•	C ₅ H ₁₁ -O-	-C ₁₂ H ₂₅		K 37	B 53.3 A 71 N 73.91
35	C6H11-O-	-C ₁₅ H ₂₇	ı	K?	B 529 A 702 N 73.21
	C ₈ H ₁₁ -O-	-C ₁₄ H ₂₀	١	K7	B 52.7 A 69.5 N 71.21
	C ₆ H ₁₃ -O-	-CH ₃	1	K 58	G 44 B 53 N 76 I
	CeH13-C-	-C ₂ H ₅	.	K 47	. G 58 N 70 I
	CeH13-O-	-C ₃ H ₇		K 29	G 85.7 A 68 N 85.6 I
40	C*H12-O-	-C4He	ı	K 33.5	G 58.5 B 59.8 A 70.1 N 77.8 I
	CeH15-O-	-C ₅ H ₁₁	- 1	K 41.9	G 45.6 B 62 A 75.1 N 85 I
	C6H15-O-	-CeH13	ł	K 15	G 35 B 63 A 77 N 82 I

 $L \longrightarrow N \longrightarrow R$

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	<u> </u> L	R	Cr	LC
	CeH17	-CeH17	K 47.9	A 36.4 N 41.81
	C ₉ H _{19*}	-CeH1s	K 37	B 40.5 A 53.21
	C10H21-	-CtoHzt	K 423	B 44.6 A 53.7 I
15	CH2-	O-CsH11	K 61	S 48 N 63 I
	C ₄ H ₉ -	-O-C7H15	K 59.7	C 40.3 N 70.2 I
	CaHar .	-O-CaH ₁₇	K 55.2	B 35 C 54.2 A 57.6 N 75.2 I
	C ₄ H ₉ -	O-CeH19	K 52.1	C 58.9 A 63.8 N 73.2 I
	CaHer	-0-C10H21	K 54.4	B 50.9 C 61.5 A 69.4 N 78.8 I
20	Catto	-0-C ₁₂ H ₂₅	K 62	160 C 64 A 75 N 78.21
	C4He-	-O-C12H29	K 84	S 66 C 69 A 77 1
= -	Cotter	-O-C19H37	K 72.5	S72A771
	C ₆ H ₁₇	-O-C7H18	K 59,2	C 58.8 A 60.2 N 77.5 I
	CeH19-	-O-C ₈ H ₁₇	K 49.2	144.8 C 68 A 77.8 N 84.7 I
<i>2</i> 5	C ₉ H ₁₉	-O-C ₂ H ₁₉	K 51	151.5 C 72.5 A 80.5 N 84.7 I
	CeH ₁₆ -	-0-C18H21	K 42.5	1623 C77.2 A 87.31
	CeH₁s-	-O-C12H25	K41.5	G 52 72.2 C 83 A 88.3
	C ₀ H ₁₉ -	-O-C14H29	K51	G 68 81.1 C 88.2
	C ₉ H ₁₈ -	-O-C16H23	K 57.5	G 77.71 86.2 C 88.6 1
30	CoH ₁₉ -	-O-C18Hay	K 63	G 81.8 1 89 1
	CH3-OOC-CH=CH-	-CH-CH-COO-CH ₃	K 237	S 246 S 249 1
	CH2-OOC-CH=CH-	-CH=CH-COO-C2H2	K 237	S 246 S 249 I
	C2H5-OOC-CH=CH-	-CH-CH-COO-C2H5	K 156	A 240 I
	C3H7-OOC-CH=CH-	-CHECH-COO-Cyty	K 120	S 209 I
35	CH3-O-	-CHCH-COO-C2H6	K 117.7	A 124.2 N 142.8 I
	CzHs-O-	-CH=CH-COO-C2H6	K 110	S 137 S 147 N 160 I
	C5H11-O-	-CHCH-CCO-C-H11	K 87	E 91 A 133 I
	C6H11-O-	-CH=CH-COO-C10H21	K 50.5	E 64 A 119 I
	C ₁₀ H ₂₁ -O-	-CH=CH-COO-C ₆ H ₁₁	K 54	8 94.5 C 95 A 127.5 I
40	C10H21-O-	-CH=CH-COO-C10H21	K 59	E 60 8 72 C 95 A 116.5 I
	CH3-COO-	-CH=CH-COO-C2H8	K 138.3	A 153.2 N 162.2 I
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L

10	C ₇ H ₁₂ C ₆ H ₁₇
15	C++++ C++++ C++++
20	Calling Calling Calling Calling Calling Crotts
25	C _B H ₁₇ C _B H ₁₇ C _B H ₁₇ C _B H ₁₇ C _B H ₁₇
30	C ₀ H ₁₇ C ₂ H ₁₁ C ₂ H ₁ ,

<u> </u>	R	L	C	၂
CHIS-O-CHMO-CHZ-OOC-	-COO-CH2-CHMe-O-C7H16	3	K 57.8	A 80,1 I
CaH17-O-CHMa-CH2-OOC-	COO-CH ₂ -CHM+-O-C ₆ H ₁₇	3	K 63	A84.1 I
CH2-COO:	-00C-CH ₃		K 229	· S 282,5 X 284.5 I
CH*CCCC-	-0000-CH ₂	, ,	K 229	S 257 N 277 I
C2H8-OCOO-	-0C00-C ₂ H ₂		K 213	S 225.5 X 242.5 I
CH11-	-CHCN-OOC-CHMe-CAH	5	K 124	A<71
CtoHet-	-O-CHMo-C ₂ H ₁₁	R	K 76.5	8 101.5 S 118 C 122.5 A 126 I
Cell 17	-COO-CHMe-C ₆ H ₁₂	1	K 116.5	A 123.41
CeHir	-COO-CH ₂ -CHMe-C ₂ H ₆	1	K 104.7	S 125.1 G* 126.9 B 147.6 A 173.5 I
CeHir	-coo-cH2-CHCI-CH3-CH3	1	K 114.2	G* 106 F* 114.2 A 163.5 I
CeH17	-000-CH2-CHCN-CH2-CH3	1	K 81.8	B 83.8 A 96.7 I
CaH11-	-O-C ₃ H ₆ -CHMe-C ₂ H ₆	5	K7	B 196 A 215.5 I
C10H21-	-O-Cyty-CHMo-Cyty	S	K 65	S 181.5 C* 188.5 A 191 I
CeH ₁ ;-	000-014-040-04	1	K 54.9	S 111.7 G* 148.5 C* 149.1 A 195.4 I
Celtur	-coo-cif-cha-ciff	1	K 123.6	G* 130.6 C* 139.7 A 169.5 I
CeHtr-	-coo-caf-catca-caf-	1	K 138	C* 151.4 A 168.5 I
Cultur	-coo-chi-chcn-ciri	1	K 77.8	G* 99.7 F 118.6 A 139.6 I
CeH17-	-coo-cH ₂ -CHCN-C ₂ H ₂	1	K 97	6 92.8 A 112.71
CeH ₁₇ -	-000-01-400-04-	1	K 78.8	8 86.7 A 101.2 I
C3H11-	o-cf ₃	ı	K 211	B 221 A 239 I
C ₅ H ₁₁ -	-O-CF ₂ H	1	K 223	A 241 I
C JH, O-CH_E	-0-CH*-CHOICH(I)-C*H*	S	K 210	E 227.8 A 257.3 I
C _e H ₁₂ -CHMe-OOC-	-COO-CH3-CHCI-CHMa-C3H3		K 55.2	C* 57.9 A 79.1 I
C _e H ₁₅ CHMe-OOC-			K 58.9	C 54.8 A 61.9 I
CeH1=CHMe-OOC	-coo-cH2-CHCI-CH3	3	K 79.5	C* 90.4 A 120.2 I
C ₆ H ₁₅ -CHMe-OOC-	-coo-chf-cha-chh	3	K 84.9	C-78.3 A 84.21
C ₆ H ₁₂ -CHMe-OOC-	-coo-a+*-cHa-c*+*	3	K 91.8	A 83.8 I
C2H3-CHMe-CH2-OOC-	-COO-CH ₂ -CHMe-C ₂ H ₆	3	K 132	. A 143 N° 145 I
art-cha-cht-coc-	-000-CH2-CHCI-CH3	3	K 123	A 135 N° 138 I
C3H2-CHC3-CH3-COC-	-000-01-010-0-1-1	3	K 137.3	A 1383 Nº 151 5 BP 152.2 I

	<u>į</u> t	R Cr	
10	C*H*COO-CHM+CH*O-	-CoHto S K 82	S 101.2 C 121.7 I
	CHI-COO-CHI-CHM-CHI-O-	-CuHa R K7	S 80 S 114 S 132 C 145 A 145 5 1
	CPH-O-CHM+COO-CHM+CH-O-	CH., S K76.	2 C 101 A 113.3 P 114.9 I
	CHI-O-CHM+COO-CHM+CH-O-	CHIS S K7S.	C- 100.7 A 105.6 Nr 109.2 I
	CH-O-CHM+COO-CHM+CH-O-	-CH14 S K73	
	CH, O CHM+ COO CHM+ CH, O	C.H. S K70.	
15	CH-O-CHM-COO-CHM-CH-O-	C.H. S K 78	C" 93.4 A 111.1 I
	CH-O-CHM+ COO-CHM+ CH-O-	CH3 S K 67.	
	CHOCH COCH CHO	-CHI S KEL	
	CH-OCHM-COOCHM-CH-O	CHI S K 68	
	CH-OCH-COCH-CH-CH-O	CHS F K63	8 77.6 \$ 122.3 C" 132.3 A 136.8 I
	CH-OGM-COOGLCHM-CH-O	CHE RX1	8 82 5 89 C' 118 A 117.41
20	CH-O CHI-COO	CJ1 R K 110	
	CeH11"	-O-CHMC-H12 1 K78	A 138 I
	CeH11-	-O-CHMo-C10H21 -1 K 70	A 127 L
	CeH11-O-	-0-CHM-CH1 1 K 104	
	CH	OCHOMOCH FK7	H 118.5 G* 139.2 F* 144.4 8 158.7 C* 165.8 A 191.4 [
	CHIPO-	-0-CH_CHM-CH_ 1 K114	
25	CH17-O-	OCH CHIA CHE 1 K 110	
25	CHC-	O-CH-CHM-CH- 1 K87	E 117 F 160 C 207 A 208 I
	C ₁₀ H ₂₁ -O-	O-CH-CHM-C-M. 1 K 85	E 108 F* 146 C* 205 A 206 I
	Callyr	OCHECHMOCHO 2 K 67	8 109 S 180 C 194 A 215 I
	CJE	-COC-CH-CHIM-CH. R K?	G* 111.3 F* 152.4 8 162.6 A 207 I
	CH	-O-CaHITCHMO-CAHS FI K 81	S 96.8 S 102.5 S 170 C 182.3 A 196.3 I
	C ₈ H ₁₇ -	OCH CHECHE F KTSA	
30	CHITCHMO-O-	-C.H., 1 K 58	C' 115 A 118 N' 117 I
	CH_CHM-COO CHM-CH_O	-C.H. 3 K 107	C* 1121
	C ₂ H ₂ -CHM ₂ -COO-CHM ₂ -CH ₂ -O-	-C+H14 S K 101	C* 113.11
	C ₂ H ₂ -CHMe-COO-CHMe-CH ₂ -O-	-C-H 3 K 92.3	I
	CHIS CHAN-COC-	-CH19 R K 57.4	- 100011 11001
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	L]R]_	Cr	LC
	Cally	-COO-CH2-CHMe-C2H8 1	K 127	A 158 N° 166 I
	CsH11-	-COO-CH_CHMe-C2H6 1	K 88	A 161.8 Nº 162.3 I
15	CeH15	-COO-CHg-CHMe-CgHs 1	K 68	C* 88 A 157 I
	C ₇ H ₁₅	-COO-CH2-CHMa-C2H8 1	K 62	C* 90 A 158 I
	CaH ₁₇	-COO-CH ₂ -CHMa-C ₂ H ₅ 1	K 67	C 101 A 153 (
	CoHier	-COO-CH2-CHMe-C2H6 1	K 53	C*100 A 151 I
	C10H21-	-COO-CH2-CHMe-C2H8 1	K 57	C-102 A 148 I
20	C12H25 .	-COO-CH2-CHMe-C2Hg 1	K 42	C-81 A 175 U
	C ₆ H ₁₁ -	-COO-CHg-CHMe-CgHg 2	K 108.5	A 163 I
	C ₂ H ₁₇	-COO-CHg-CHMe-CgHg 2	K 68.9	I 51.4 C 103.6 A 154.5 I
	Caller	-COO-CH2-CHMC3H7 2	K 57.2	196.4 C 93.7 A 150.4 I
	CoH17	-COO-CH2-CHMa-C4Ha 2	K54.5	135.7 C 91.7 A 145 I
25	C7H15	-OCOO-CH2-CHMe-C2H5 S	K 88.8	B 105 A 160.7 N° 163.81
	CoHIT	-OCOO-CH2-CHMa-C2H8 S	K78.3	A 1502 Nº 165.2 I
	C+He-C-	-CH2-CHMa-C2H5 S	K 107	E 102 A 174 Nº 193 I
	CoH11-O-	-CH2-CHMe-C2H5 S	K 91	E 70 B 96 A 172 N° 186 I
	CeH15-C-	-CH2-CHM+-C2H5 S	K 88.5	J 84 C 103.5 A 172 N 1821
30	C+H+E-C-	-CH2-CHMe-C2H5 S	K 86.5	K 66 J 70 F 79 C 126 A 170 N 177 I
	CeH17-O-	-CHCHMO-C2H6 S	K77	K 61 J 72 P 80 C 182 A 171 N 174 I
	CaH19-O-	-CH2-CHMa-C2H8 S	K 82	K 61 J-70 I-79 C- 133 A 169 N- 171 I
	C10H21-O-	-CH_CHMO-C2H8 S	K 38	K 60 J" 70 I" 79 C" 133 A 167 I
	C12H25-C-	-CH2-CHM-C2H8 S	K74	J 68 79 C 131 A 162
<i>35</i>	C14H29-O-	-CHZ-CHMo-CZHA S	K79	J 67 F 79 C 124 A 157 I
	C10H22-C-	-CH_CHMO-C_H, S	K 68	J 65 F 79 C 120 A 1541
	C18H37-O-	-CH2-CHM4-C2H5 S	K71	J" 64.5 " 79 C" 118 A 150
	C4He-O-	-CHCHMe-CzHs 2	K 107	E 103 A 174 N 192)
	C3H11-O-	-CH2-CHMe-C2HE 2	K90	E 72 B 98 A 172 N 1881
40	CeH12-O-	-CH2-CHMa-C2H5 2	K 88	G 84 C 103 A 172 N 182 I
	C7H15-O-	- 1	K 86	H 68 G 70 F 79 C 128 A 170 N 177 I
	CaH17-O-	-CH2-CHMe-C2H8 2		K 61 J 72 I 79 C 132 A 171 N 174 I

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	<u> </u>	<u> </u>	Ш	Ċ .	· LC
	Calla CHMo-Chig.	O-C7H1s	3	K 65	J' 85 I' 91 C" 110 N" 184 I
	Call-Calle Call	-O-CeH17	티티	K 60	J* 90 I* 92 C* 114 N* 163 I
	Calla-Crisso-Crig-	-O-C ₀ H ₁₉	8	K 80	" J" 88 I" 90 C" 116 N" 152 I
15	Calle Chilate Chile	-0-C ₁₀ H ₂₁	티티	KOS	J* 78 F 67 €* 117 N* 148 I
	CH-CHM-CH-	-0-C12H23	s	K 50	J 70 F 87 CT 116 NT 136 I
	Catte Cittee City.	-0-C14Hzi	1	K 50.8	C" 93.1 A 130.8 U
	C ₂ H ₂ -C+tMa-CH ₂ -	-O-C10Hat	[2	K 55	J78.8 (90 C 117.3 N 151.8 (
	C'Ha-CHUMO-CHIT-O-C'HIT-	-0-C10He1	8	K 79.5	. 8 75 CT 115.5 I
	C*H*-CHIM+-CH*-O-CHIM+	-D-C19H31	3	K 89	C* 961
20	Citi Citto Citi Citi	-C-C+117	뎍	Kæ .	S-103 CT-114 NT-129 I
	Chit Charle Chit - Inter Chit-	-O-C ₁₃ H ₃₅	ᅧ	K ⊘ 5	8 89 CT 111 NT 115 I
	CH CHANGON TONG CH	-O-C14Han	9	K 45	8 83 CT 105 NT 109-I
	Calle CHMe CHa NMe CHa	-0-C ₁₆ H ₃₆	8	K 65	- 882 CT 104 NF 107 I
	C ₂ M ₂ CHIMo CH ₂ NNAo CH ₂ .	-00-	9	K72	8 75 C" 104 N" 107 I
	CH, CHM-CH, O.	-O-C ₂ H ₁₇	8	K 130.5	C* 128.8 N* 174 I
25	CHU CHMO CHEO	-O-C ₂ H ₁₇	1	K 108.2	C 125.3 NT 141.3 I
	CH CHANGE COL COC	-O-CeHts	1	K B4	E 121.3 8.125.6 A 166.9 N° 177.5 l
	CHLCHM-CH-COC	-0-C#H ₁₇	1	Kasa	E 102 B 119 CT 125.9 A 162.9 NT 170,4 I
	CH-CIMA-CH-OOC-	-0-0-0131	1	K 85.5	B 97.9 C* 143.5 A 158.8 N* 162.7 [
	CH-CHM-CH-COO-	-0-CH117	8	K 110	C* 148.5 N* 189.9 I
30	CFIP-CHIMP-CHF-COC-	-Q-C ₇ H ₁₈	3	K 120	CT 130 NT 134 I
30	CH-CIME CH-O-CIME COO-	-0-C ₆ H ₁₇	3	K 115	C" 135 N" 139 I
	Citte Citte Citte COC-	-D-C ₂ H ₁₀	3	K 104	CT 131 NF 183 I
	CTHE CHING CHE CO CHING COCK	-0-Cutty	3	K 103	C* 134 I
	Cittle Cittle Cittle COC-	-0-C ₁₂ H ₂₅	3	K 106	C ⁻ 129 J
	C'H*-CHM+-CH*-OCCO-	-O-CaH ₁₃	S	K 99.7	C" 125.1 N" 185 I
35	Cith-CHM+CH-CCCC-	-O-C ₂ H ₁₇	s	K 104	C" 135.9 N" 173.8 I
	C'H* CHM+ CH* OCCO-	-O-C _e H ₁₉	8	K 102.8	C" 199.8 N" 170.4 I
	CaHa-CHA-CHa-OCOO-	-O-CroHan	s	K 105.8	C* 142.9 N* 165.81
	C2H2-CHM0-CH2-	-0C2H-0C1H	s	K7	S 64 C* 76 A 92 N* 126 I

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<u> L</u>	R	Cr	l · Lc
CsH11"	-O-C ₂ H ₁₇	K 86.3	C 88.3 N 132.4 I
CoH15 .	-O-C ₂ H ₁₇	K 87	C 102.2 N 126.6 I
C7H15-	-O-C ₂ H ₁₇	K 87.3	176.4 C 112.6 A 123 N 130.9 I
CeH17-	-O-C ₂ H ₁₇	K 87.6	1 89.4 C 120 A 125 N 128.2 I
CeHier	-O-C ₆ H ₁₇	K 84.6	B 92.3 C 124.7 A 129 N 129.5 I
C10Hz1-	-O-C ₂ H ₁₇	K 87.8	G 94.3 C 127.2 A 125.3 I
C10H21-O-	-COO-CHMe-CeH13 1	K7	- CA7C-97C71
C12H25-O-	-COO-CHMe-CaH13 1	K?	CA7 G-97 C-71

L	R	Cr	LC
C10H21-O-	-00C-C10H21	K 40.7	P-321

15	[L	R		Cr.	<u>i_</u>
	CeH13-	Br		K 104.5	S 141.5 N 146.5 I
	C10H21-	-Br		K 95	S 143 I
	C12H25	· Br		K 100.5	S 144.61
	Cally	-CN		K 133.1	. A 107.3 N 209.1 I
20	C12H25	<u>-</u> CN		K 98.5	S 1651
	CeH13-	-COO-C ₃ H ₆ -SIMe ₂ C ₄ H ₉		K 45	S-17 C 41 A 70 I
	H-	-O-C ₀ H ₁₇	.	K 116.7	F 93 N 116.5 I
	H-	-O-C _e H ₁ e	-	K 113	F 94.8 N 114.51
	Н-	-O-C ₁₀ H ₂₁		K 110.8	F 96.5 N 116 l
25	H-	-O-C ₁₂ H ₂₅		K 114.6	B 99.6 C 99.7 N 115.2 I
	C2H5-	-C ₉ H ₁₉	1	K 89.7	G 95 N 114.6 I
	C2Hs-	-C ₁₀ H ₂₁	-	K 72	G 66.4 N 109.7 I
	C3H7-	-C ₆ H ₁₇	1	K 88.9	G 73.5 N 110.8 I
	C ₃ H ₇ -	-C ₉ H ₁₉	1	K 88.2	G 78.7 N 113.3 I
30	Catti	-C ₁₀ H ₂₁	- 1	K 83	G 74.1 N 110.8 I
	C4Hg-	-C ₆ H ₁₇	-	K 90	G 79 N 104.31
	C4H	-C ₉ H ₁₉	١	K71.1	G 81.6 N 106.6 I
	C ₄ H ₉ -	-C10H21		K 70	K 79.5 J 80.5 F 81.5 82.7 N 103.7
	CsH11-	-C ₆ H ₁₇		K 82.4	G 82.3 N 108.5 I
35	C5H11-	-C ₉ H ₁₉	- 1	K 80	G 85.8 N 110.2 I
	CsH11-	-C ₁₀ H ₂₁	١	K73.2	K78.9 J 82.5 F 84.3 I 86.3 C 87.7 N 106,7 I
	C ₆ H ₁₃ -	-C ₆ H ₁₇		K 78	K 80.7 J 82.2 I 85 C 86.7 N 104.5 I
	CoHis	-C ₉ H ₁₉	- 1	K 74.5	K 82.6 J 85.4 F 87 I 88.3 C 91.4 N 107.2 I
	CoHis	-C ₁₀ H _{Z1}	-	K 67.4	K 79.2 J 80.9 F 85 I 88 C 92.8 N 103.8 I
40	C7H18-	-C ₈ H ₁₇	- }	K 88	K 68 J 78 I 81.6 C 91.6 N 107.4 I
	C7H15-	-C ₉ H ₁₉	١	K 86.3	K 79 J 82.2 F 84.8 I 86.4 C 98 N 110.2 I
	C7H15	-C10H21	ŀ	K-76.8	K 78.6 J 78.1 F 83.4 I 86.5 C 98.6 N 106.7 I
	CeH17	-C ₆ H ₁₇	- }	K 87.3	J 71.1 80 C 96.3 N 106.7
	CaH17	-C ₉ H ₁₉	j	K 88.8	J 76.4 F 82.6 I 84.9 C 100.6 N 108.1 I
45	CeHty-	-C ₁₀ H ₂₁	١	K 75.8	K 68.1 J 74 F 83.9 I 86.7 C 103 N 107 I

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	iL	l 'RI	Cr	LCI
	CeHir	-C7H15	K 60	E 54.6 B 81.8 A 128.2 N 128.8 I
15	CeHir	-CeH17	K 70	E 47.7 B 82.2 A 126.6 I
15	C4Hg-	-O-C ₈ H ₁₇	K 84.4	C 73.9 N 149.5 I
	C4Hg-	-O-C ₉ H ₁₉	K 92	C 78.6 N 141.7 I
	C ₄ H ₈ -	-O-C10H21	K 88.8	C 82.8 N 143.8 I
	C ₀ H ₁₇ -	-O'-C ₅ H ₁₁	K 88.9	E 84.3 B 99.7 A 137.6 N 147.3 I
20	C ₆ H ₁₇ -	-O-CeH13	K 86.1	E 75.9 B 99.7 C 120.7 A 138.6 N 148.9 I
	CeH ₁₇ -	-O-C7H15	K 91.7	E 73.3 B 97.8 C 125.6 A 138.8 N 146.2
	CeH ₁₇	-O-C ₈ H ₁₇	K 87	- E70:1 B 95.2 C 130.5 A 139.5 N 146,4 I
	CeH17"	-O-C ₀ H ₁₉	K 95.6	E 68.9 B 95.5 C 130 A 139.5 N 143.2 I
	CeH ₁₇	-O-C10H21	K 92.3	E 66.2 B 93.5 C 131 A 138.9 N 142.6 I
25	C10H21-	-O-C ₈ H ₁₁	K 90.1	H 81.5 B 102.8 C 119.6 A 141.1 N 143.2 I
	CtoHz1-	-O-C ₆ H ₁₂	K 89.5	H 70 B 99.4 C 131.5 A 142.7 N 145.3 I
	C10H21-	-O-C7H15	K94.2	H 65.5 B 100.5 C 135.7 A 141.7 N 143.1 I
	C10H21-	-O-C ₆ H ₁₇	K 93	H 62.2 B 99.5 C 138 A 142 N 142.9 I
	C10H21-	-O-C ₉ H ₁₉	K 97	H 60,5 B 99.9 C 137,8 A 141,1 I
30	G10H21-	-O-C ₁₀ H ₂₁	K 96.5	B 99.5 C 138.3 A 140.7 I
	C ₁₂ H ₂₅ -	-O-C ₅ H ₁₁	K 95.8	H 83.2 G 93.4 B 103.8 C 123.9 A 140.4 I
	C ₁₂ H ₂₅ -	-O-C ₆ H ₁₃	K 95.8	H 86.5 B 103.1 C 134 A 142.1 I
	C12H25-	-O-C7H15	K 97.4	H 8Z B 102.5 C 137.1 A 140.4 I
	C ₁₂ H ₂₅ -	-O-C ₆ H ₁₇	K 97.4	H 69 B 101.3 C 139.6 A 140.9 I
<i>35</i>	C12H25-	-O-C ₉ H ₁₉	K 99.8	H 63.7 B 102.2 C 139.6 I
	C ₁₂ H ₂₅ -	-O-C ₁₀ H ₂₁	K 97.9	B 102,2 C 139,3 I

5 L R

B	ł	Cr	LCI
-C ₂ H ₇	2	K 65	G 88 C 93 I
Calty	2	K 45	C 88 I
-C ₃ H ₇	2	K 73	E77 C841
1 -	•	;	G 43 C 71 I
-Cally	2	K?	G 45 C 55 I
-CaH7	2	K 28	C721
	-C3H7 -C3H7 -C3H7 -C3H7	-C ₃ H ₇ 2 -C ₃ H ₇ 2 -C ₃ H ₇ 2 -C ₃ H ₇ 2	-C ₃ H ₇ 2 K 65 -C ₃ H ₇ 2 K 45 -C ₃ H ₇ 2 K 73 -C ₃ H ₇ 2 K 7

L S P R

	<u>L</u>	l al	la l	LCİ
40	C7H15	-O-C ₆ H ₁₃	K74	C 77.9 A 123.3
	C7H15-	-O-C ₀ H ₁₇	K78.6	C 77.9 A 122 I
	C ₀ H ₁₇ -	-O-C ₀ H ₁₃	K 70	C 99 A 122.3 I
	CeH ₁₇	-0-C ₀ H ₁₇	K77.3	C 100.2 A 120.3 I
	C ₆ H _{19*}	-O-CaHta	K 66.5	C 103.5 A 123.8 I
45	CoHier	-0-C ₄ H ₁₇	K72.9	C 107.4 A 121.7 I

	<u>J</u> L	R	L	Cr	(၁)
15	CeH18-O-	-CsH ₁₁		K 74	S 48 S 70.5 F 74 C 102 N 124.5 I
	C10H21-O-	-CaH11	l	K 75	6 56.5 B 83.5 C 111 N 125 I
	C11H25-O-	-C ₉ H ₁₁		K 74.	S 65 B 94 C 118 A 120 N 123 I
	C ₁₂ H ₂₅ -O-	-C ₅ H ₁₁		K 78	B 90 C 115 N 124 I
	C ₇ H ₁₅ -	-co-cH ₃		K 125	S 132 N 140.5 I
20	CaHe-O-			K 134	S 144 N 176 I
20	CeH12-O-			K 149.5	C 154,5 N 169 I
	C3H11-COO-	-co-cH ₂		K 143	S 150 N 1791
	Cather	-coo-c ₂ H ₃	1	K 118	B 119.5 N 125 I
	C4Hg-O-	-000-C ₂ H ₅	1	K 121	A 129 N 156.5 I
	CeH13-CHM6-OOC-	-O-C ₆ H ₁₂	Ħ	K 51	. S 82 I
25	CeH12-CHMe-OOC-	-O-C ₇ H ₁₅	Ħ	K 62	S 81 I
	C _e H ₁₂ -CHMe-OOC-	-O-C ₆ H ₁₇	Ħ	K 73	Sesi
	CeH13-CHMe-OOC-	-O-C ₉ H ₁₀	Ą	K70	\$771
	C ₈ H ₁₂ -CHMe-OOC-	-O-C10H21	Ħ	K72	S 76 A 81 I
	C ₆ H ₁₂ -CHMe-OOC-	-O-C ₁₁ H ₂₅	H	K 55	S 70 C* 74 A 79 I
30	CeH13-CHMe-OOC-	-O-C ₁₂ H ₂₅	H	K 54	. S 69 C* 75 A 79 I
	CH3-CHMe-CHCI-COO-	-O-C ₆ H ₁₃	1	K 59	S 54 B 96 C* 106 N* 125 I
	CH3-CHM+CHCI-COO-	-O-C7H15	1	K 69	S 96 C" 110 A 111 N" 122 I
	CH3-CHMe-CHCI-COO-	-O-C ₆ H ₁₇	1	K 81	S 96 C* 112 A 115 N* 121.7 I
	CH3-CHMe-CHCI-COO-	-O-C ₉ H ₁₉	1	K 49	I" 96.5 C" 114 A 117 N" 120 I
35	CH3-CHMe-CHCI-COO-	-O-C10H21	1	K 48	1" 96 C" 114 A 116 N" 119.5 I
	CH3-CHMe-CHCI-COO-	-O-C11H25		K 57	I* 96.5 C* 114 A 119 I
	CH3-CHM+CHCI-COO-	-O-C ₁₂ H ₂₅	1	K 60	l' 95.2 C' 114 A 118 l
	C2H8-CHMa-C3H8-O-	-O-C ₉ H ₁₉		K 65	J* 82 * 95 C* 111 N* 123
	CzH-CHMe-CJH-O-	-O-CoH ₁₉	1	K 50	J" 79 I" 93 C" 111 A 118 I
40	CzHs-CHMe-CsH10-O-	-O-C ₉ H ₁₉	1	K 72	J* 82 I* 99 C* 121 N* 123 I
	CaH15-C-	-COO-CHMe-CeH13	Ħ	K 50	CT 65 A 100 I
	C7H15-O-	-COO-CHMa-CaH12			C* 78 A 97 I
	CaH17-O-	-COO-CHMa-CaH13			C* 83 A 99 I

	L	R	Cr	LCI
15	CH15	-O-C ₆ H ₁₇	K 84.4	C79.3 N 104.61
	CeH17-	-O-C#177	K 87.1	B 58 C 91.7 N 104.5 I
	Ce)Hig-	-O-C ₂ H ₁₇	K78.8	B 65.6 C 97.2 N 105 I
	CipHai-	-O-C4H17	K 81	B722 C 1027 N 104.7 I

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25 L	R

30	<u>[L</u>) RI		α .	l tei
	CyH1FO-	-COO-CHM4-C_H13	1	K 92.3	*72.7 CA 87.5 C-g 90 C* 96.1 C-a 96.4 A 136 I
	JC₀H₁y-O-	-COO-CHMa-CaHis	1	K 57.8	*71.8 CA 96.1 C-9 97 C* 104 C-4 105.5 A 135.3 [
	CHIPC	-CCO-C25M-C ₂ H ₁₂	1	K 62.2	*84 CA 92.5 C-g 95 C* 107.6 C-a 108.5 A 129.6 I
	C ₁₀ H ₂₁ -O-	EIKO-OMED-COO-	A	K 58.2	CA 94.8 C-9 96.1 C 111.2 A 128.5 I
	C ₁₁ H ₆₃ -O-	-CCO-CHMo-C ₂ H ₁₃	1	K 66	CA 89 C-9 82.3 C 112.4 A 123 I
35	C19Hgg-O-	-COO-CHMo-C ₂ H ₁₃	1	K73.4	CA 92 C-g 94.3 C" 113.2 A 121.3 I
	C10Har-O-	-COO-CH-CHM+CH	8	K 53	9 54 C" 131 A 169 N" 172 I
	C ₆ H ₁₂ -CHMe-OOC-	-OCH13	A	K 92	C 62 A 122 I
	C ₈ H ₁₂ -CHMe-OOC-	OCHIA!	R	K 83	C 85 A 117 I
	C ₄ H ₁₃ -CHM-OOC-	OCHIT!	A	K84	G* 90 A 1171
	C ₀ H ₁₂ -Cr Mo -OOC-	الريك م	셔	K 87	C 99 A 112 I
40	CyH19-CHMo-OOC-	-O-C10H21	Ħ	K 67	C 102 A 1121
	C4H12-CHMa-OOC-	-O-C ₁₁ H ₂₂	Я	K 91	C' 107 A 1091
	C*H2-CHM+-OOC-	OC,Ha	- 1		C* 105 A 109 I
	C2H+CHM+CH2+OOC-	-O-C_H ₁₇			C" 120 A 159 N" 178
	CFH-CHM+-CH-OOC-	-O-C ₁₀ H ₂₁	4	K 91	C" 122 A 158 N" 168 I

L —	R
	'O

L	A	Cr	LC
C10H21-O-	-049	K 108.5	9 121.5 N 202.5 I
C10H21-O-	-C2H8	K 84	S 136.5 N 197 I
C10H21-O-	-CeHe	K 68	B 88 C 151 N 192 I
C12H25-O-	-04	K 99.5	S 142.5 N 193.5 I
C12H25-O-	-C2He	K 90	S 150 N 186.5 I
C12H25-O-	-C4He	K 66	8 91 C 159 N 185 I
C14H2FO-	-CH ₃	K 95	S 155 N 184 I
C14Hzg-O-	-C3H6	K 94	S 155 N 180 I
C14H29-O-	-CJH9	K 64	B 95 C 162 N 178 I
C10H35-C-	-CH ₂	K 91	S 160.5 N 178 I
C10H35-O-	-CaHs	K.94	\$ 157 N 172 I
C19H33-O-	-C.H.	K 53	B 96 C 163 N 172 I
Ctells-O-	-CH ₃	K 88	S 150 N 171.5 I
C1#137-O-	-C2H3	K 95	S 157.5 N 166.5 I
C3H11-O-	-0-C ₆ H ₁₇	K 95	S 136 N 226 I
CeH13-C-	-O-CeH17	K 90	S 151 N 221 I
Cyttie-O-	-O-C ₂ H ₅	K 101.5	C 73.8 N 250 I
CH15-C	-O-C ₂ H ₇	K 114.3	S 84.5 C 108 N 235 I
C7H16-O-	-O-C4H9	K 90.4	S 88.4 C 128.4 N 234.6 I
C7H15-O-	-O-CgH11	K 89.4	S 85.5 C 141.5 N 221.5 I
C7H15-O-	-O-C ₉ H ₁₃	K 92	S 83 S 84 C 150 N 221.7 I
C7H18-O-	-0-C7H15	K 101.4	S 85 C 157 N 215.5 I
C7H15-O-	-O-CeH17	K 89.7	S 84 S 86 C 162.6 N 213.4 I
CyH15-C-	-O-C ₉ H ₁₉	K 92.9	S 81.2 S 85.8 C 168.8 N 208.7 I
CyH15-O-	-O-C10H21	K 90.4	S 80 S 85.5 C 167.4 N 205.3 I
CaH17-O-	-0-C.H17	K 94	S 169 N 215.5 I
CeH19-O-	-O-C2H3	K 104.2	C 99 N 236 I
C ₀ H ₁₉ -O-	-O-C ₂ H ₇	K 105.4	S 79 C 134.8 N 224 1
CoH19-O-	OCH.	K 94.6	S 80 C 148.8 N 221.8 I
C9H19-O-	-0-C ₆ H ₁₁	K 91.2	S 79 S 80.5 C 158.8 N 215.3 I
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 $L \longrightarrow N$

	<u> L</u>	[R]	Cr	L LC
	C ₂ H ₅ -	-C2He	K 127	S 136 S 149 N 251 I
15	Cally .	-C++-	K 109.2	H 114.5 G 143 C 150,7 A 180.6 N 255 I
	C4He-	-0.44	K 113	S 74 H 89.2 G 144.5 C 172 A 199 N 235 I
	CaH11-	-C3H11	K72.8	H 62.8 G 139 F 148.8 C 178.3 A 212 N 233.3 I
	CeHian	-C ₂ H ₁₃	KMS	H 64.5 G 141.6 F 152.4 C 186.2 A 207.5 N 215.5 I
	C7Hts-	-C _r H ₁₈	K 61.5	H 48 G 143 F 156.9 C 191.4 A 210 N 211.5 I
20	Celtin	-Celler	K 53.5	H 48 G 138.5 F 158.8 C 192.5 A 202.5 I
20	CeHier	CoHia	K 57.3	G 132.5 F 155.5 I 157.5 C 192.7 A 190 I
	C10H21-	-C10H21	K73	G 115 F 149 I 158 C 198 A 198 I
	C ₁₂ H ₂₆	-C12H25	K 80.7	G 112.9 F 136.9 I 151 C 180.3 I
	Cializa	-Custler	K 95	G 115 F 130 I 183 C 178 I
	C14Hzgr	-Ctalles	K90	F 120.1 144 C 170
25	CisHat-	-CisHai	K 91	Q 117 167 C 170
	CieHar	-C10H33	K 89	F 133.8 138.8 Ç 160
	C'H2-00C-CH=CH	-CH-CH-CCC-CFH ²	K 180.8	B 189.7 C 232 A 305 N 7 Z
	- CH11-00C-CH=CH-	-CH=CH-CCC-C3H11	K 124.7	B 133 C 247 A 307 N 314 Z
	C2HF-OOC-CM==CH-	-CH-CM-COO-C2H2	K 169	S 241 S 249 N 306 Z
30	CHO	-0-CuH ₀	K 191	C 221 N 295'I
30	CeH13-O-	-0-CH12	K 159	S 176 S 232 S 239 N 292 I
	CH17-O-	-O-C ₆ H ₁₇	K 144	S 172 S 234 S 241 N 246 I
	CizHzz-C	-O-C ₁₂ H ₂₃	K 130	S 162 S 215.1 I
	C2H5-6-	-S-C ₂ H ₂	K 175.8	A 204.5 N 236.2 I
	CH*O-CH*O-	-0-CH-0-CH-3	K 136.2	8 140.9 A 147.1 N 222 I
35	chtodic	-0-CH2-0-C4H4	K 106.2	· A 118.7 I
	C++-00C-	-000-04-	K 153	A 199 N 258 I
	C+H-00C-	-coo-c ₂ H ₄	K 92	C 137 A 190 N 209 I
	CeH1+OOC-	-coo-C*H11	K 100	A 206 N 216 I
	C*H12-00C-	-COO-C*H12	K 113	C 148 A 189 I
40	CHIECOC-	-COO-C7H18	K 92	C 140 A 198 I
₩	C ₄ D ₂ .	-C4D0	K 112	S 148 C 174 A 201 N 238 I

15	<u></u>	I R	Cr	<u> </u>
15	CeH17-C-	-CH-C(COO-C ₀ H ₁₃) ₂	K 52	C 51 A 85 N 101 I
	CeH17-C-	-CH=C(COO-C7H15)2	K 58	C 51.5 A 83 N 97 I
	CeH17-O-	-CH=C(COO-C ₀ H ₁₇) ₂	K 59	C 53 A 84 N 94 I
	C+H17-O-	-CH=C(COO-C ₀ H ₁₉) ₂	K 58	C 53 A 85 N 94 1
20	CeH17-O-	-CH=C(COO-C10H21)2	K 63	C 55 A 84 N 91 i
20	C_H17-O- ·	-CH=C(CCO-C ₁₁ H ₂₃) ₂	K 61	C 56 A 84 N 90 I
	C6H17-O-	-CH=C(COO-C12H25)2	K 67	C 57 A 85 N 89 I
	CeH17-O-	-CH=C(COO-C10H33)2	K 83	- C 65 A 85 N 86 I
	C.H.,-O-	-CH=C(COO-C ₁₈ H ₃₇) ₂	K 85	C 69 A 83 I
25	CeH1e-O-	-CH=C(COO-C3H11)2	K 70	C 56 A 88 N 107 I
20	CeH17-C-	-CHCN-CH(COO-C3H7)2	2 K 60	A 100 N 131 I
	CH*O-	-O-C ₉ H ₁₇	K?	C 65 N 207 I
	CsH11-O-	-O-C ₈ H ₁₇	K 97	- C 101 N 201 I
	CoH15-C-	-O-C ₆ H ₁₇	K 96	C 132 A 144 N 198 I
30	C7H15-O-	-O-C7H15	K 87	C 143 A 162 N 193 I
•	C7H15-C-	-O-C ₆ H ₁₇	K7 .	C 142 A 155 N 193 !
	C6H17-O-	-0-CH ₂	K 107	A 122 N 226 I
	CaH17-O-	-O-C ₂ H ₆	K 110	A 130 N 213 I
	- C ₈ H ₁₇ -O-	-O-C ₈ H ₁₇	K 87 .	C 145 A 163 N 189.5 I
35	CeH,,-O-	-O-CHMe-COO-C2Hs :	S K 86	A 117 N° 122 I
	CeH++-O-	-0-CHMe-COO-C ₈ H ₁₇ !	K 71	A 94 N° 113 I
	C.H.T-O-	-co-cH ₃	K 131	A 210 N 227 I
	C6H12-O-	-COO-C ₃ H ₇	K 101.5	C 188.5 N 193 I
	CeH17-O-	-CO-N(-CH ₃) ₂	K 127	A 144 N 204 I
40	CoH17-C-	-COO-N=C(-CH3)2	K 116	A 180 N 230 Z
	CaH17-O-	-COO-N=C(-C2H6)2	K 77.5	A 155.5 N 192 Z
	CaH17-O	-COO-N=C(-C3H7)2	K 91	A 128 N 165 I
	GeH17-O-	-COO-N=C(-C7H19)2	K 78	A 83 N 116.5 I
	CeH17-O-	-COO-N=C(-C11H23)2	K73	A 78 N 99 I
45	CeH17-O-	-COO-N=C(-C ₁₃ H ₂₇) ₂	K 59	A 78 N 93 I

5	\mathbb{R}
10	L—

<u> </u>	R	lcr i	ıcl
C ₀ H ₁₃ -O- C ₁₀ H ₂₁ -O-	-O-C ₆ H ₁₃ -O-C ₆ H ₁₇ -O-C ₁₀ H ₂₁	K 122.4 K 61.2 K 89.9	B 132.5 N 243 I H 100.2 G 121.2 C 158.4 N 223.1 I H 87.2 G 95.5 C 173.4 N 202.1 I

[L _]	R	C	I LC
CoHo	-C4H9	K 89	P 107 I
CeHts	-C ₆ H ₁₃	K70	P 1121
C7H15	-C7H15	K 60	P 1141
C12H25	-C ₁₂ H ₂₅	K 53	P 108.8 I
C16H33	-C ₁₆ H ₃₃	K 69	P 102.51

 $L \longrightarrow R$

	L	A	Cr	_ LC
,	CaH17	-CeH17	K 57	P 61 I
	CeHte	-C ₀ H ₁₇ -C ₀ H ₁₈	K 57	P 68 I

5

 $L \longrightarrow R$

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L	R	Cr	LC	Ref
H-O-CeH12-O-	-O-C6H12-O-H	K 97.9	S 178.8 I	5165
H-CONH-	-NHOC-H	K 274	S 286 1	
Br-C3H4-COO-	-OOC-CaHe-Br	K 114	S 142 I	7455
Br-C4Hg-COO-	-OOC-CLHL-Br	K 96	S 1161	
Br-CsH10-COO-	-OOC-CsH1g-Br	K 57	S 103 I	
Br-C7H14-COO-	-00C-C7H14-B1	K71	S 99 I	

L _______F

R) 1Cr LC Br-C10H20-COO--OOC-C10H20-Br K 83 30 S 100 I C5H11-K 11.5 N-34 E C6H11--C2H4-O-H K 72 'S 112.5 I C2H8-OюH K 169 X 1761 CaH17-O--O-CH2-CHIBU-O-H K 85 S 58 6 103 S 113.1 S 113.6 S 115.8 A 119.5 I -O-C₀H₁₂-OOC-CMe=CH-H CH3-O-K 86 5 73 1 35 C2H5-O--O-C₆H₁₂-OOC-CMe=CH-H K 63.1 N 87.6 I K 53 C6H11-O--O-C₀H₁₂-OOC-CMe=CH-H 8 57 I C4H13-Q--O-C0H12-OOC-CM==CH-H K 79 3 84 ! C4He -CO-H K 4.5 N 2 I C₆H₁₁--со-н K 21.5 N 23.5 I 40 CoH13 -CO-H X -5.5 N 17.51 C7H15. **₩** K 4.5 N 33 I CaH17 -CO-H K 20.5 S 30 N 36 I Caltie -со-н K 31 S 42 N 45 I

$$L$$
 R

	L	R	ľ	Cr	l LC	ı
10	C10H21-	-co+i		K 42	541	t
	CaH17-O-	-COO-CH ₂ -CHMs-O-H	s	K 119	A 1181	1
	C ₂ H ₅ -O-	-OOC-CMe=CH-H		K 95	X 105 I	
	C ₀ H ₁₇ -O-	-00С-С₄Н₂-00С-СМе⇒СН-Н		K 80.6	S 86.2 I	1
	C ₆ H ₁₇ -O-	-OOC-C2H4-CHMe-CH2-OOC-CMe=CH-H	1	K 46	\$ 64.11	i
15	C ₆ H ₁₃ -O-	-00C-C11H22-NHOC-CM0CH-H		K 111	S 132 X 7 1	
	CzHg-CHMe-CHF-CHz-OOC-		3	K 127.5	2 132 7 71	
	CH3-CHM9-CH2-CHCI-CH2-OOC-	- 0н]	!
	C2H6-CHMe-CH2-O-	-O-CaH12-OOC-CMe=CH-H	S	K 42.5	S 49 1	
	CeF17-C11H22-O-	-CONH-H		K 224	3401	i
20	HIC-CH-CIHI-O	. - 0-н	i	K-136		
	H ₂ C=CH-C ₀ H ₁₈ -O-	-011		K 134	S 139 I	
	CeH11-	-CH≖CH-F		K7	S 123 I	
:=	CaHr	-90 ₂ -F	-	K 94	N-100 E	
	C4Hg-CitiC-	-F		K?	S 73.7 I	
25	CsH11-	-C ₂ H ₄ -Cl	ı	K 48	N 14 E	
	C4Hg-O-	-co-ch ₂ -ci	- 1	K 115	E 110 I	
	CsH11-O-	-co-ch _e -ci	- [K 98	E 72 A 103 I	
	CeH13-O-	∞-CH±-CI	ı	K 87	E 107 A 116 I	
	C ₇ H ₁₅ -O-	-co-cri _e -ci		K 93	E 106 A 122 I	
30	C ₈ H ₁₇ -O-	-co-ch-ca	1	K 88	E 105 A 126 I	

	L	L a	l	l Cr	ાગ ા
10	C ₆ H ₁₉ -O-	-co-ch ₂ -ci		K 95	E 102 A 126 I
	C10H21-O-	-CO-CH ₂ -CI		K 89	E 101 A 128 I
	C3H11-CO-C2H4-CO-	-Br		K 119	A 123.81
	C4H13-CO-C2H4-CO-	-Br		K 120.3	A 127.51
	C3H7-COO-CH2-CO-	-Br		K 94.4	\$ 1121
15	C3H11-COO-	-Br		K70	E 83 B 103 I
	C4H13-COO-	-Br		K 68.5	E 74 B 104 I
	C7H15-COO-	-Br		K76	S 59.7 B 104.5 I
	C ₆ H ₁₇ -COO-	-Br		K 69	E 46 B 103 I
	C*H18-COO-	-Br		K 73.5	B 102.51
20	C ₃ H ₁₁ -	-CH ₂ -Br		K 78	NISE
	CsH11-	-C:::C-Br		K 88	X 108 I
	CH3-C-	-O-C ₉ H ₁₈ -Br		K 88.4	~
	C ₆ H ₁₃ -	-CO-CH ₂ -Br	ı	K 64	A 52 I
	C7H15-	-CO-CH ₂ -Br		K 60.5	A 59.5 !
25	C ₀ H ₁₇ -	-co-ch _z -Br		K 65.5	A 64 I
	CeH19	-CO-CH ₂ -Br		K 84	A 67 I
	C10H21-	-CO-CH ₂ -Br	- 1	K72.5	A701
	C2H5-O-	-CO-CH ₂ -Br		K 137	S 112.51
	C3H7-O-	-CO-CH ₂ -Br	1	K 124	S 118.51
30	C ₄ H ₈ -O-	-CO-CH ₂ -Br	1	K 107	E 106 I
	CsH ₁₁ :O-	-CO-CH ₂ -Br	٠,	K 93	E 101 (
	CeH13-O-	-co-ch _z -Br		K79	E 98 A 104 !
	C7H15-O-	-CO-CH ₂ -Br	1	K 96	E 92 A 104 I
	C ₉ H ₁₇ -O-	-co-ch _z -Br	Į	K 80	E 95 A 107 I
<i>35</i>	C ₉ H ₁₉ -O-	-CO-CH _z -Br	- (K 95	E 100 A 1151
	C10H21-O-	-CO-CH ₂ -Br	1	K91	E 98 A 116 I
	C7H15-O-	-со-снсі-вл	2	X 95	A 56 (
	C ₈ H ₁₇ -O-	-со-снс-вг	2	K 68	A711
	C ₀ H ₁₈ -O-	-CO-CHCI-Br	2	K 68	A781
40	C ₁₀ H ₂₁ -O-	-CO-CHCI-Br	2	K 65	A 66 I
	C2H5-CHMe-C2H4-COO-	-Br	1	K 58	S 28 1
	C ₈ H ₁₁ -O-	-NO ₂	Į	K 54.5	N <42 I
	C ₆ H ₁₃ -O-	·NO ₂		K 67	N 32.5 I
	C7H15-O-	•NO²		K 38.5	A 30.5 N 38.5 B
45	C ₈ H ₁₇ -C-	-NO ₂		K 51.5	A 49.5 N 51.5 B
	H ₂ C=CH-O-C ₁₁ H ₂₂ -O-	-NO ₂		K 97	6.05.01
	CeHiar	-CH=CF2		K 59	\$ 95.81
	C ₅ H ₁₁ -	-CH ₂ -CH=CF ₂		K 35.9	S 53.1 I
	C ₃ H ₁₁ -	-C ₂ H ₄ -CH≠CF ₂		K -25.4	S 30.8 S 50.6 I
50	C ₀ H ₁₈ -O-	-COO-isopinocampheyi	A		A 48.7 N° 55.7 I
	}CH ₂ -	-C ₆ H ₁₁		K 48	N-11

	L	R	Cr	L (c)	
10	CzHa-	-C ₆ H ₁₁	K <20	\$ 33.91	
	C ₃ H ₇ -	-C ₂ H ₁₁	K-18	S 47.8 I	
	CoHy	-C ₆ H ₁₃	K -10.5	E 48 i	
	CaH ₇ .	-C7H18	K-14	E 29 B 50.5 I	
	Catter	-CeH13	K-2	E 40.5 B 48.5 1	
15	C4H	-C ₇ H ₁₅	K-15	E 16.5 B 38.5	
	CsH11-	-C ₂ H ₁₁	K 25.1	E 46.1 E 47.1 L 52.3 I	
	CeHir	-C ₀ H ₁₃	K?	E 11.7 E 41.7 E 42.6 L 53.7 I	
	CsH11-	-C ₇ H ₁₅	K7	E 36 B 63 I	
	CeHts	-CeH13	K 25.1	E 46.1 E 47.1 L 52.3 I	
20	∳C¢H₁∓	-C ₇ H ₁₈	-K.?	E29.7 E30.2 L 58.1 I	
	C7H15	-C ₇ H ₁₈	K?	E 19.5 E 35.1 L 61 I	
	CeH17-	-CaH ₁₇	K 57	P 81 1	
	CpH ₁₉ -	-CeHte	K 57	P 68 I	
	C ₅ H ₁₁ -	-CH2-O-CH3	K 48	\$471	
25	CsH11-	-CH2-O-C3H7	K 27	S 21 I	
	C ₅ H ₁₁ -	-CHZ-O-C9H11	K 18	. S 10 I	
	CeHtt-	-O-C2H4	K 72	· S 81 !	
	C ₆ H ₁₁ -	-O-C#4	K 37	S 80.1 S 88.1 I	
	C ₅ H ₁₁ -	-O-C _e H ₁₃	K 82	. 5841	
30	CeH13-	-O-C ₆ H ₁₉	ΚĐ	E 68 B 83.9 I	
	C7H15-	-O-C ₆ H ₁₂	K 58	B 86.5 I	
	C ₈ H ₁₇ -	-O-C ₆ H ₁₃	K 46	B 84 I	
	CoH17-	-0-C ₆ H ₁₇	K 57.	E 86 I	
	C#H ₁₈ -	-0-C ₂ H ₁₃	K 34	8 82 1	
35	C3Hy-	-NH-C4H8	K 75	S 74.1 I	
	C ₆ H ₁₁ -	-NH-C4H9	K 45	A781	
	C ₃ H ₇ -	-co-c ₂ H ₈	K 42	S 130 I	
	C ₅ H ₁₁ -	-со-сн ₃	K 77	B 84 I	
	C ₅ H ₁₁ -	-CO-C4He	K 90	S 106.2 S 110.51	

EP 0 915 144 A1

$$L \longrightarrow R$$

	jL	' 'R	Cr	
10	C5H11-	-CO-C ₆ H ₃₁	K 106	B 104 A 109.51
	C5H11-	-co-c _e H ₁₃	K 96	A 111 I
	CeH13-	-co-cH ₃	K 79	B 85.5 I
	CeH13-	-co-c ₆ H ₁₁	K 108	A 105.9 1
	C7H15-	-co-cH ₃	K 76.5	B 84.5 I
15	C7H15-	-co-c _s H ₃₁	K 94.3	8 95.6 A 103.8 I
	CeH17-	-со-сн	K 88.5	B 64 1
	CeH17-	-co-c ₋ H ₁₁	K 87.5	B 92.2 A 101.3 1
	CgH1gr	-со-сн _э	K 85	B 82.51
	CoHis	-co-c _e H ₁₁	K 80.2	B 58.1 A 99.7 I
20	C10H21-	-co-c ₆ H ₁₁	K 77.5	B 88.8 A 98.71
	C10H21-	-CO-C ₉ H ₁₉	K 57.8	E 1101
	C ₅ H ₁₁ -	-co-ch _z -co-ch ₃	K 110	X 135 (
	C10H21-	-co-ch ₂ -co-ch ₃	K 86	E 97 8 107 A 135 I
	C ₂ H ₁₁ -	-co-ch-coc-c ₊ h	K 85	S 147 I
25	CaH ₁₇ -	-CO-CH ₂ -OOC-C ₂ H ₇	K70	S 144 I
	C6H13-	-CO-CH=CH-COO-C2H5	K 40	S 59 I
	CeH13-	-co-chch-coo-c ₃ H ₇	K 40	S 66 I
	CeH13-	-co-cH=cH-coo-c4H9	K34 ·	8 68 1
	CeH ₁₃ -	-co-ch=ch-coo-c _k h ₁₁	K 25	S 57 I
30	C ₆ H ₁₇ -	-CO-CH=CH-COO-C3H7	K 62	S 72 1
	CeH17	-CO-CH=CH-COO-C4H9	K 58	S 69 I
	. C ₆ H ₁₇ -	-co-cH=CH-COO-C ₆ H ₁₁	K 54	5701
	C ₆ H ₁₇	-co-ch=ch-coo-ceh13	K 36	S711
	CaH ₁₇	-CO-CH=CH-COO-C7H15	K 40	S 72 1
35	CeH ₁₇ -	-co-ch=ch-coo-c ₄ H ₁₇	K 35	\$711
	C ₃ H ₇	-COO-C ₃ H ₇	K 63	X 61 1
	C6H11-	-coo-c ₃ H ₇	K-55	X 58 1
	C5H11-	-coo-c _a H ₁₇	K 29	B 25 I
40	C _e H ₁₇ -	-COO-C ₂ H ₆	K 64	B 61.4 A 61.4 I
40	•	•	1	•

10	<u> L</u>	RI RI	Cr	rcl
	C8H17-	-COO-C ₃ H ₇	K 60	A 57 I
	C5H11-	-COS-CZH6	K7	E 103.5 L 113 A 121.4 U
	CeHtt-	-cos-c ₃ H ₇	K?	E 90 L 110.3 A 118.5 I
	CgH11-	-cos-c ₄ H ₉	K7	E75 L 109 A 120.51
15	CeH11-	-cos-c _s H _{tt}	K7	E 59.8 L 104.5 A 120 I
	CgH11-	-COS-C ₀ H ₁₃	K?	E 50 L 102 A 118 I
	CsH11-	-COS-C7H15	K7	E 40.1 L 100.2 A 116.7 I
	CgH11-	-COS-C ₆ H ₁₇	K?	E 33 L 99.8 A 116.3 I
	C3H11-	-cos-c _e H ₁₉	K?	E 25 L 95.4 A 113.8 I
20	GgH11-	-cos-c _{te} H ₂₁	.K.?	E-15 L-94 A-113.2-1
	CsH11-	-00C-C ₂ H ₁₁	K 45.7	\$ 57.41
	CeHtz	-00C-C7H15	K 65	E 83 B 91 I
	C7H15-	-OOC-CHMe-CHME-O-CH ₂	K-18	C' 9A 13 I
	CeH17-	-OOC-CHMe-CHMe-O-CH ₃	K 32	C 10 A 15 I
<i>2</i> 5	CsH11-	-CMe=N-O-C ₂ H ₅	K73	A 91 1
	CeH13-	-CMe=N-OOC-C4He	K 89	A 88 1
	CeH13-	-CM=-N-OOC-C+H17	K 70	A 86 I
	C.H17-O-	-C ₅ H ₁₀ -CHMe-O-C ₅ H ₇ 1	K14	S 18 S 37 C 41 1
	C10H21-O-	-C3H10-CHMe-O-CH3 1	K41	S 49 C 53 1
30	C10H21-O-	-C ₅ H ₁₀ -CHMe-O-C ₂ H ₅ 1	K31	5 32 5 38 C 48 1
	C ₁₀ H ₂₁ -O-	-CsH10-CHMa-O-CsH1 1	K 28	5 23 \$ 35 C* 44 I
	C10H21-O-	-CsH10-CHMe-O-C4He 1	К33	S 25 C 35 A 39 I
	C10H21-O-	-C ₈ H ₁₀ -CHMa-O-C ₆ H ₁₁ 1	K 32	5 27 C' 30 A 36 I
	C ₁₂ H ₂₅ -O-	-C ₆ H ₁₀ -CHMe-O-C ₃ H ₇ 1	K 40	C4U
35	C10H21-O-	-CeH1Z-CHMe-O-CeH7 1	K 43	S 46 S 56 1
	C2H6-O-	-O-C ₂ H ₆	K 176	X 185 (
	CoH13-O-	-O-C ₆ H ₁₂	K 124	N 130 U
	CeH17-O-	-0-СНМ-СОО-СН3 5	K 57	A 49.2 I
	C.H17-O-	1 -1	K 39	A 42 I
40	CH*O-	-CO-C ₂ H ₅	K 145.7	1

EP 0 915 144 A1

$$L \longrightarrow R$$

10	L_	R	Cr	LCI
	CH3-O-	-CO-C3H7	K 126.2	E 122.2 A 125.9 [
	CH3-O-	-CO-C4He	K 120.5	A 117.7 I
	CH2-O-	-CO-C ₆ H ₁₁	K 123	A 119 I
4-	CH3-O-	-CO-C ₆ H ₁₃	K 118	A 117 I
15	CH ₃ -O-	-CO-C7H15	K 120	A 117.7 I
	CH3-O-	-CO-C ₈ H ₁₇	K 116	A 116.21
	CH3-O-	-CO-C ₉ H ₁₈	K 118	A 116.7 I
	C2H3-O-	-co-cH ₂	K 96	E 156.2 (
20	C ₂ H ₆ -O-	-CO-C2H6	K 124	E 172.4 I
20	C2H2-O-	-CO-C ₃ H ₇	K 123	E 156.2 !
	C2H6-O-	-co-c4H8	K 106	E 136 A 153 I
	C2H8-O-	-CO-C ₂ H ₁₁	K 110	E 129.9 A 150.6 I
	C2H6-O-	-CO-C ₆ H ₁₃	K 107	E 124 A 148 I
05	C+H-O-	-CO-C7H18	K 111.5	E 121 A 148.4 I
25	C2H6-O-	-CO-C ₉ H ₁₇	K 108	E 120.2 A 144.8 I
	C₂H ₆ -O-	-CO-C ₉ H ₁₉	K 116	E 121.7 A 143.1 i
	C ₂ H ₇ O-		K 107	E 155.6 I
	C ₃ H ₇ O-	-CO-C ₂ H ₅	K 119	E 177.3 I
30	C3H7-O-	-co-c ₃ H ₇	K 138.5	E 153.9 A 158.2 i
30	C3H7-O-	-co-c4H9	K 126	E 135.7 A 154.6 I
	C ₃ H ₇ -C-	-CO-C ₆ H ₁₁	K 116	· E 125.9 A 150.3 I
	C3H7-O-	-CO-CeH13	K 113	E 120.1 A 147.3 I
	C ₃ H ₇ -O-	-CO-C7H15	K 118	E 121 A 145.2 l
35	CaHy-O-	-CO-C ₈ H ₁₇	K 115	E 120.3 A 143 I
35	Cath-O-	-CO-CoH10	K 106	E 119,5 A 141 I
	C4H9-O-	-со-сн ₃	K 97	E 144 I
	C4Hg-O-	-CO-C2H5	K 114	E 167.3 A 171.4 !
	C ₄ H _g -O-	-CO-C3H7	K 101.5	E 145.7 A 155.9 I
40	C ₄ H _e -O-	-CO-C4Hs	K 124	E 136.2 A 156.8 I
₩.	C4Hg-O-	-CO-C5H11	K 115	E 120 A 150.8 I

$$L \longrightarrow R$$

	lı ,	R	Cr	L
10	C4HPO-	-CO-C ₀ H ₁₃	K 109	E 115 A 151.51
	C4Hg-O-	-CO-C7H15	K 99	E 113.7 A 148.9 I
	C4He-O-	-CO-C ₆ H ₁₇	K 102.5	E 111.8 A 146.8 I
15	C4H9-O-	-CO-C ₀ H ₁₉	K 107	E 111.6 A 144.7 I
	C5H11-O-	-CO-CH ₃	K 90	E 139.5 I
15	CeH11-O-	-CO-C ₂ H ₅	K91	E 155.6 A 169 (
	C ₆ H ₁₁ -O-	-CO-C3H7	K 93	E 129.5 A 150.8 I
	CaH11-O-	-CO-C4H9	K 124	E 121 A 152.1 1
	C4H11-O-	-CO-C ₅ H ₁₁	K 128.8	E 127 A 147.8 I
••	CaH11-O-	-CO-C ₂ H ₁₃	K 117	E 113 A 146.3 (
20	C5H11-O-	-CO-C7H15	K111	E 108 A 143.8 [
	C3H11-O-	-CO-C ₈ H ₁₇	K 104	E 101 A 144 I
	C ₆ H ₁₁ -O ₋		K 102.7	E 101.5 A 141.8
	CeH to-O-	-CO-CH ₃	K 91	E 137 I
25	C ₆ H ₁₂ -O-	-CO-C2H3	K78	E 149 A 165.5 I
	CeH15-O-	-CO-C ₂ H ₇	K 82	E 121,8 A 147 I
	C ₈ H ₁₃ -O-	-CO-C4He	K 109	E 116 A 149.6 I
	CeH12-O-	-CO-C ₆ H ₁₁	K 120.5	A 145.3 (
	C ₆ H ₁₃ -O-	-CO-C ₆ H ₁₃	K 124.5	A 145.21
	C ₆ H ₁₅ -O-	-CO-C7H15	K 123	A 142.51
30	CeH19-O-	-CO-C ₀ H ₁₇	K 113.5	A 141.21
	CoH15-C-	-CO-C ₀ H ₁₉	K 110.2	A 139.5 I
	C7H15-Q-	-co-cH ₃	K 99	E 136 I
	C7H15-O-	-CO-C2H6	K 98	E 146.8 A 163.7 I
35	C7H15-O-	-CO-C3H7	K 87	E 120.2 A 145.2 I
35	C7H15-C-	-CO-C ₄ H ₉	K 106	E 110 A 147 I
	C7H18-O-	-CO-C6H11	K 112.5	A 142.31
	C7H15-O-	-CO-C ₆ H ₁₃	K 123	A 138 I
	C7H15-O-	-CO-C7H15	K 126.5	A 139.7 I
40	C7H15-O-	-CO-C ₀ H ₁₇	K 119	A 138.7 I

$$L \longrightarrow R$$

10	<u> </u>) R	[cr]	ယ
	C7H18-O-	-CO-C ₀ H ₁₉	K 114	A 134.71
	C.H17-O-	-co-cH ₂	K 96	E 136.5 I
	CeH17-O-	-CO-C ₂ H ₃	K 104	I 8.181 A 8.441 3
15	CaH17-O-	-co-c ₃ H ₇	K 98	E 118.9 A 142.9 I
75	CeH17-O-	-co-c4H*	K 106.5	. E 107 A 145.7 I
	C ₂ H ₁₇ -O-	-co-c ₂ H ₁₁	K 104	A 1401
	C ₂ H ₁₇ -O-	-co-c413	K 116	A 140.3 I
	C ₆ H ₁₇ -O-	-00-C ₇ H ₁₅	K 125	A 138.5 I
20	C ₀ H ₁₇ -O-	-CO-C ₆ H ₁₇	K 124.5	A 137.4 I
20	C ₂ H ₁₇ O-	-co-c _e H ₁₈	K 124.5	A 134.9 I
	C ₉ H ₁₉ -O-		K 104.2	E 135 !
	C ₂ H ₁₂ -O-	-00-03H2	K 112	E 144.3 A 160 I
	C ₂ H ₁₉ -O-	-00-044	K 109.5	E 118.2 A 141 I
25	C ₉ H ₁₉ -O-	-co-c4He	K 101	E 106.4 A 143.9 I
	CgH1g-O-	-co-c _s H _{tt}	K 108	A 138.5 I
	C ₈ H ₁₈ -O-	-CO-C ₆ H ₁₃	K 112.8	. A 139 l
	C _B H ₁₈ -O-	-CO-C7H15	K 124	A 136 I
	C ₂ H ₁₈ -C-	-CO-C ₀ H ₁₇	K 124.5	A 135.4 I
30	CPH18-O-	-CO-C ₉ H ₁₉	K 128.5	A 132.8 i
	C10H21-O-	-CO-CH ₃	K 103	E 132 I
	C10H21-O-	-CO-C ₂ H ₅	K 92	E 143.4 A 157.5 (
	C10H21-O-	-CO-C ₃ H ₇	K 90	E 117.5 A 138.8 I
	C ₁₀ H ₂₁ -O-	-CO-C4He	K 97	E 108 A 141.21
35	C ₁₀ H ₂₁ -O-	-CO-C ₅ H ₁₁	K-101.9	A 136.6 I
	C ₁₀ H ₂₁ -O-	-CO-C ₂ H ₁₃	K 108.7	A 137 I
	· C10H21-O-	-CO-C7H15	K 110.5	A 134 I
	C10H21-O-	CO-C ₀ H ₁₇	K 118	A 133.3 I
	CtoHzt-O-	CO-C ₈ H ₁₉	K 123.5	A 130.9 I
40	C11H23-O-	-CO-CH ₃	K 110.5	E 130.6 I
	C ₁₂ H ₂₅ -O-	-co-ch ₃	K 109.8	E 129.9 I

$$L \longrightarrow R$$

10	<u>1i</u>	R	Cr	ပေ
	C12H25-Q-	-CO-C ₂ H ₅	K 95.5	E 139.3 A 151.51
	C ₁₂ H ₂₃ -Q-	-CO-C ₃ H ₇	K 105.5	E 115.5 A 134.8 I
	C12H25-Q-	-CO-C4He	K 102	E 105 S 115 A 141 I
	C ₁₂ H ₂₅ -O-	-CO-C ₆ H ₁₁	K 98	A 132.5 I
15	C ₁₂ H ₂₅ -O-	-CO-CeH13	K 105	A 131 I
	C ₁₂ H ₂₆ -O-	-CO-C ₇ H ₁₆	K 108.5	A 129,7 I
	C ₁₂ H ₂₅ -O-	-CO-C ₆ H ₁₇	K 112.5	A 129.8 I
	CtaHas-O-	CO-C ₂ H ₁₉	K 115.5	A 127.4 I
	C14H29:O-	-co-ch ₄	K 112.1	E 123.2 B
20	Ciellar C	-CO-CH3	K-116.8	E 122.51
	C4He-O-	-CO-CH ₂ -CO-C ₄ H ₉	K 125.1	A 155.4 I
	CeH1s-O-	-CO-CH ₂ -CO-C ₂ H ₃	K 108.6	E 128.1 A 175.2 I
	C ₈ H ₁₇ -O-	-co-cH ₂ -co-cH ₃	K 108.7	E 140.7 A 176.51
	C _B H ₁₇ -O-	-CO-CH ₂ -CO-C ₂ H ₆	K 101	E 124.3 A 173.1 I
25	CeH17-O-	-co-cH ₂ -co-c ₄ H ₈	K 110.2	A 152.5 I
	C ₈ H ₁₇ -O-	-CO-CH ₂ -CO-C ₆ H ₁₇	K 125.3	A 137 I
	C ₉ H ₁₉ -O-	-CO-CH2-CO-CH3	K 104.5	E 141 A 175.5 I
	C10H21-O-	-co-cH2-co-cH3	K 100.5	E 137.4 A 173.8 I
	C10H21-O-	-CO-CH ₂ -CO-C ₂ H ₅	K 98.5	E 123.4 A 168,3 I
30	C ₁₁ H ₂₂ -O-	-co-cH2-co-cH3	K 108.5	E 135.6 A 172 I
	C11H2-O-	-CO-CH ₂ -CO-C ₂ H ₅	K 105.1	E 123.7 A 166.8 I
	C12H25-O-	-CO-CH2-CO-CH3	K 105	E 135 A 167.5 I
	C ₁₂ H ₂₅ -O-	-CO-CH ₂ -CO-C ₂ H ₅	K 95.8	E 120 A 161,5 I
	C ₁₂ H ₂₃ -O-	-CO-CH ₂ -CO-C ₃ H ₇	K 112.5	E 103.3 A 147 I
35	C ₁₂ H ₂₅ -O-	-CO-CH ₂ -CO-C ₄ H ₉	K 105.2	A 133.8 I
	C ₁₂ H ₂₅ -O-	-CO-CH ₂ -CO-C ₁₂ H ₂₅	K 124.4	A 125.8 I
	C ₁₄ H ₂₉ -O-	-CO-CH2-CO-C2H6	K 106	E 120.5 A 158.5 I
	C ₁₈ H ₃₃ -O-	-CO-CH2-CO-CH3	K 118.9	E 139.1 A 162 I
40	C ₁₈ H ₃₇ -O-	-CO-CH2-CO-CH3	K 121.7	E 137 A 157.8 (
40	C ₁₈ H ₃₇ -O-	-CO-CH ₂ -CO-C ₂ H ₅	K 113	E 114.5 A 150.7 I

EP 0 915 144 A1

$$L \longrightarrow R$$

	<u>]L</u> ,	R	lœ l	LC
10	CH3-O-	-coo-c ₆ H ₁₃	K 61.7	E 45.4 I
	C2Hs-O-	-coo-c ₃ H ₇	K 102	S 103 I
	C3H7-O-	-coo-c ₂ H ₇	K 105	S 107 I
	C4Hg-O-	-COO-C ₃ H ₇	K 97	A 113.51
	C ₄ H _g -O-	-COO-C4Hg	K 93	E 92 A 102 I
15	C8H11-O-	-COO-C ₂ H ₅	K 114.5	A 123.51
	C ₅ H ₁₁ -O-	-COO-C ₃ H ₇	K 80	A 106.51
	CsH11-O-	-COO-C ₆ H ₁₃	K 63.7	E 63.3 8 68.4 A 85.4 I
	CsH11-O-	-COO-C7H15	K?	E 59 B 65 A 81 I
	C6H11-O-	-COO-C ₁₂ H ₂₅	K 70.4	E 54.4 A 70.6 I
20	CeH13-O-	-COO-CH ₃	K 124	E 132 B 139 A 139 I
	CeHts-C-	-COO-C ₂ H ₅	K81	E 92 B 97 A 118 I
	CeH13-O-	-COO-C ₃ H ₇	K 80	E 67 B 74 A 107 I
	CeH13-O-	-COO-C4He	K 58	B 64 A 92 I
	CeH13-O-	-COO-C ₃ H ₁₁	K 83	B 58 A 90 E
25	CeH13-O-	-COO-C ₆ H ₁₃	K79	8 57.5 A 86 E
	CeH15-O-	-COO-C ₇ H ₁₈	K 76	8 57 A 84 E
	CeH13-O-	-coo-c ₀ H ₁₇	K74	B 56 A 82 I
	CeH15-O-	-COO-C ₉ H ₁₉	K71	B 55 A 80 I
	CeH13-O-	-COO-C ₁₀ H ₂₁	K 59	B 54.5 A 78 1
30	C7H15-O-	-COO-CH ₂	K 124	E 127 B 133 A 133 t
	C7H15-O-	-COO-C2H8	K 52	E 88 B 94 A 111 I
	C7H15-O-	-COO-C ₃ H ₇	K 78	E 54 B 84 A 102 I
	C7H15-D-	-C00-C4He	K 52	C 59 A 89 I
35	C7H15-O-	-COO-C ₅ H ₁₁	K79	C 50 A 87 E
35	C7H18-O-	-COO-C ₀ H ₁₃	K 88	C 60 A 84 E
	C7H15-O-	-COO-C7H15	K 86	C 55 A 82 E
	C7H15-O-	-COO-C ₆ H ₁₇	K 78	108A
	C7H15-O-	-COO-C ₉ H ₁₉	K 69	A 78 I
40	C7H15-O-	-COO-C ₁₀ H ₂₁	K 69	A 76 I

10	L	R	Cr	LCI
	C ₈ H ₁₇ -O-	-COO-CH ₃	K 117	E 126 B 132 A 132 I
	C ₈ H ₁₇ -O-	-COO-C ₂ H ₅	K 75	E 88 B 96 A 112 I
	CaH17-O-	-COO-C ₃ H ₇	K 83	B 64 A 101 I
	C8H17-O-	-COO-C ₄ H ₉	K 56	C 56 A 86 I
15	CaH17-O-	-COO-C ₆ H ₁₁	K 66	C 55 A 88 E
,,	CoH17-C-	-COO-C ₆ H ₁₃	K72	C 56 A 82 E
	CeH17-O-	-COO-C ₇ H ₁₅	K 87	C 46 A 83 E
	CaH17-O-	-COO-C ₂ H ₁₇	K 80	A 80 1
	CaH17-O-	-COO-C ₀ H ₁₉	K 79	ASOI
20	C.HO-	-C00-C1-H21	K 75	A.78.1
20	C2H17-O-	-COO-C ₁₁ H ₂₃	K74	A791
	CeH17-O-	-COO-C12H25	K78	A761
	CoHITO-	-COO-C19H27	K 77	A781
	CaH ₁₇ -O-	-COO-C ₁₄ H ₂₂	K 80	A741
25	C6H17-C-	-COO-C16H31	K77	A741
20	CaH17-O-	-COO-C ₁₈ H ₃₃	K 83	A721
	CaH17-C-	-COO-C17H35	K 81	A72 E
	CaH17-O-	-COO-C18H37	-K 80	A70 E
	CoH17-C-	-COO-C ₁₉ H ₃₉	K 81	A 69 E
30	C ₉ H ₁₉ -Q-	-C00-CH ₃	K 124	E 123 B 129 A 129 I
-	C9H19-O-	-COO-C2H6	K 78	E 81 8 91 A 106 I
	CoH18-O-	-000-C ₂ H ₇	K 67	B 63 A 99 I
	CoH10-O-	-C00-C4H9	K 84	C 56 A 86 I
	CaH19-O-	-COO-C ₅ H ₁₁	K 62	C 55 A 86 E
35	CoH19-O-	-COO-C ₆ H ₁₃	K71	C 57 A 83 E
**	C ₉ H ₁₉ -O-	-COO-C7H15	K 84	C 54 A 82 E
	CeH10-O-	-COO-C ₀ H ₁₇	K 86	C 36 A <84 E
	C10H21-O-	-COO-CH ₃	K 122	E 117 B 124 A 124 I
	C10H21-O-	-COO-C ₂ H ₃	K71	E 80 B 90 A 104 I
40	C10H21-C-	-COO-C ₃ H ₇	K 7	8 67.9 A 99 I

45

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$$L$$
 R

	L	l al	Cr	
10	C ₁₀ H ₂₁ -O-	-coo-c4He	K 54	C 49 A 82 I
	C ₁₀ H ₂₁ -O-	15,H ₂ D-000-	K 66	C 53 A 82 I
	C ₁₀ H ₂₁ -O-	-COO-C ₆ H ₁₃	K 60	. C57 A 84 I
	C10H21-O-	-COO-C7H15	K74	C 66 A 80 E
	C10H21-O-	-COO-C ₈ H ₁₇	K 83	C 57 A 78 E
15	C ₁₀ H ₂₁ -O-	-COO-C ₀ H ₁₀	K 88	C 52 A 7 E
	C10H21-O-	-COO-C ₁₀ H ₂₁	K 85	C54 A 7 E
	C ₁₂ H ₂₅ -O-	-COO-CH ₃	K 122.5	S 124 I
	C ₁₂ H ₂₃ -O-	-COO-C ₂ H ₆	K 80.5	\$ 102.51
	C ₁₂ H ₂₅ -O-	-COO-C ₃ H ₇	K71	S 97 (
20	C ₁₂ H ₂₅ -O-	-COO-CeH13	K 69	G 57.8 C 67.5 A 80 I
	C ₁₂ H ₂₅ -O-	-COO-C ₇ H ₁₅	K77	G 72 C 74 A 81 1
	C12H23-O-	-COO-C ₆ H ₁₇	K 78.3	C 72.6 A 80 I
	C14H20-O-	-C00-C ₆ H ₁₃	K 68	G 58.8 C 68.2 A 81 I
	C ₁₄ H ₂₂ -O-	-COO-C7H18	K71.2	C 72.5 A 82.51
25	C ₁₄ H ₂₉ -O-	-COO-C ₆ H ₁₇	K76	C74.5 A 80.5 I
	C18H33-O-	-COO-C ₂ H ₅	K 88	B 82 A 94 I
	C ₁₈ H ₅₂ -O-	-COO-C ₃ H ₇	K80	8 46 A 89 E
	C ₁₆ H ₃₃ -O-	-C00-C ₄ H ₉	K78	A791
	C ₁₈ H ₃₃ -O-	-COO-C ₂ H ₁₁	K79	G 40 A 81 E
30	C ₁₆ H ₃₃ -O-	-COO-CeH13	K 75	G 60 A 78 E
	C ₁₆ H ₃₃ -O-	-COO-C7H15	K77	G 72 A 80 I
	C ₁₈ H ₃₃ -O-	-COO-C ₂ H ₁₇	K74	G76A781
	C ₁₆ H ₃₃ -O-	-COO-C ₂ H ₁₈	K 83	G 76 A 60 t
	C18H33-O-	-COO-C10H21	K 83	G77 A78 E
35	C ₁₈ H ₃₃ -O-	-COO-C ₁₁ H ₂₃	K 88	G 72 A 79 E
	C16H23-O-	-COO-C ₁₂ H ₂₅	K 89	G 64 A 77 E
	C ₁₆ H ₃₃ -O-	-COO-C ₁₃ H ₂₇	K 91	G 40 A 78 E
	C18H37-O-	-COO-C ₂ H ₅	K72	B 55 A 87 E
40	C ₁₈ H ₃₇ -O-	-COO-C ₃ H ₇	K 83	A 86 I

10	<u>L</u>		l Cr	l LCI	
	CoH19-O-	-OOC-CHCI-CHMe-CH3 1		S 62.5 C* 68 A 82.5 1	
	C ₁₉ H ₂₁ -O-	-OOC-CHCI-CHMe-CH ₃ 1	K 82	C* 69 A 81 I	
	C ₁₁ H ₂₂ -O-	-OOC-CHCI-CHMe-CH3 S	K 88	A 851	
	C ₁₂ H ₂₅ -O-	-OOC-CHCI-CHMa-CH ₃ 1	K 92	A 851	
15	C7H15-O-	-OOC-CHCI-CHMe-CH ₃ 2	K?	G 70.2 C 72.4 A 82 1	
	C ₂ H ₁₁ -O-	-OOC-CHCI-CHMe-C2H3 3	K7	C* 55 A 64 B	
	C ₀ H ₁₃ -O-	-OOC-CHCI-CHMe-C2H3 3	K 47	S 48 C" 51.5 A 61 I	
	C7H15-O-	-00C-CHCI-CHMe-C2H3 3	K 55	C 55 A 62 I	
	C ₈ H ₁₇ -O-	-OOC-CHCI-CHMe-C2He 3	K 48	S 36 C* 56 A 66 I	
20	CgH ₁₉ -O-	-OOC-CHCI-CHMe-C ₂ H ₆ 3	-K.52	C' 53.5 A 65.1	
	C10H21-O-	-OOC-CHCI-CHMe-C2H5 3	K 50	C* 43 A 49 U	
	C ₁₂ H ₂₅ -O-	-00C-CHCI-CHM+-C2H3 3	K 62	C* 66 A 67 I	
	C ₁₄ H ₂₉ -O-	-OOC-CHCI-CHMe-C2H3 3	K 66	A 68 I	-
	C ₆ H ₁₇ -O-	-OOC-CHCI-CHMe-C2H3 5	K7	C* 59 A 60 I	
25	C ₆ H ₁₃ -O-	-OOC-CHBr-CHMe-CH ₃ S	K 64	C- 67 I	
	C _t H ₁₇ -O-	-OOC-CHBr-CHMe-CH3 S	K 35	C* 48 A 56 I	
	CtoH2t-O-	-OOC-CHBr-CHMe-CH ₃ S	K 55	C* 57 A 68 I	
	C ₁₂ H ₂₅ -O-	-OOC-CHBr-CHMe-CH ₃ S	K 69	A 70 I	
	C ₆ H ₁₃ -O-	-OOC-CHBr-CHMe-C2H6 3	K7	C" 55 B	
30	C ₆ H ₁₇ -O-	-OOC-CHBr-CHMe-C2H3 3	K 20	C 42 A 53 I	
	C10Hz1-O-	-OOC-CHBr-CHMe-C2H4 3	K?	C* 49 A 58 B	
	C ₁₂ H ₂₅ -O-	-OOC-CHBr-CHMe-C2H5 3	K7	C* 47 A 59 B	
	C ₈ H ₁₇ -O-	-OOC-CHMe-CHMe-C2H5 3	K 48	1° 36 C° 53 A 64 I	
	C _B H ₁₇ -O-	-OCOO-CH ₂ -CHCI-CHMe-C ₂ H ₅ 3	K 43	C* 50 I	
35	2(C2H5-OOC)-CH-C8H12-O-	-O-CHMe-CeH13 S	K -20	. X 19 I	
	C ₅ H ₁₁ -COO-	-CO-CHMe-C ₂ H ₅ S	K7	S 15 S 32 A 57 I	
	C ₈ H ₁₇ -COO-	-CO-CHMe-C2H5 S	K 47.8	A 65.1 I	
	C ₁₃ H ₂₇ -COO-	-CO-CHMe-C ₂ H ₈ S	K 69.4	A 66.7 1	
	C7H15-COO-	-COO-CHMe-C ₂ H ₅ ·F	K 48.7	C° 22.4 A 44.6 I	
40	C ₆ H ₁₇ -COO-	-COO-CHMe-C ₂ H ₅ F	K 56.2	C* 25.4 A 45.6 I	

 $L \longrightarrow R$

	•.	_		
10	·[L	R	C	L
10	C ₁₈ H ₃₇ -O-	-COO-C ₄ H ₆	K 83	A78.1
	Cuthar-O-	-coo-c ₆ H ₁₁	K 43	A791
	C12H37-O-	-COO-C ₂ H ₁₂	K 84	G 50 A 76 E
	CIPH33-CI-	-соо-с _{ини}	K 82	9 67 A 78 E
	CuH27-C-	-coo-c ₆ H ₁₇	K 84	G75A76E
	Cultur Cr	-COO-C ₂ H ₁₀	K 80	G77 A781
15	C18/61-CH	-000-61641	K 84	Q 75 A 76 E
	C ¹⁸ H ^{31—} O-	-COO-C ₁₁ H ₂₃	K81	G 66 A 78 E
	C19H31-O-	-C00-C ₁₃ H ₂₅	K 88	A76E
	CH11-C-	-cos-c _e H ₁₃	K 91	L 121 A 149.51
	Con 11-C	-00C-C ₁ H ₁₁	K7	€ 97.7 B 106 I
	CH17-C	-00C-C ₂ H ₁₉	K 87	G 107 F 108-51
20	Chin-o-	-00C-C ₁₁ H ₂₃	K78	G 105 F 108.51
	CoH17-O-	-00C-C ₁₃ H ₂₇	K 82	G 104 F 106 I
	C7H18-NH-	-NH-C ₇ H ₁₈	K 96.8	C 93 N 103.8 I
	CeH17-N81-	-NH-C ₂ H ₁₇	K 99	198.1 C 110 N 110.41
	CeH19-NH-	-HH-CeHte	K 83.8	1 102 C 112 A 1
	CroHz1-NH-	. NH-Cultza	K 97.1	1108.8 C 116.61
25	Ct1He3-NH-	-MH-C11H20	K 85.4	F 92.81109.9 C 1171
	CtaHas-NH-	-HH-C12H25	K 96.4	11135C117.81
	C18H35-NH-	-NH-C10H33	K 103	1115.81
	CtaHar-NH-	-NH-Cultur	K 105.2	1114.61
	CH+O-CH+O-	OCHOCH	K 127	K 139 1
	CHI-O-CHI-O-	OCH-OCH.	K75	K 1181
30	C*H*2-0000-C*H*-O*	-0-C ₂ H ₁ -0CCO-C ₂ H ₁₃	K &3	S 109 I
30	C2H18-OCOO-C2H1-O-	-0-C ₂ H ₂ OCCOO-C ₇ H ₁₈	K77	3 85 1
	C*H11-0C00-C*H1-C*	-0-C ₂ H ₁ -0000-C ₂ H ₁₇	K 83	Sasi
	CH3-OCOO-C#H12-O-	-0-C ₂ H ₁₂ -0C00-CH ₂	K 107	S 169 (
	C*H*-OCOO-C*H'F-O-	-0-C ₂ H ₁₂ -0C00-C ₂ H ₄	K 98	S 166 I
	C*H1-CCCCC*H18-C	-O-C ₂ H ₁₂ -OCOO-C ₂ H ₇	K 95	\$ 157 !
	CH+0000-CHIEO-	-0-C ₂ H ₁ -0CCO-C ₂ H ₂	K90	\$ 170 1
35	C*H11-0C00-C*H12-0-	-0-C ₂ H ₁₂ -0000-C ₂ H ₁₁	K 89	S 150 I
	C+H13-OCOO-C+H12-O-	-O-C ₂ H ₁₂ -OCOO-C ₂ H ₁₃	K 49	S 168 I
	C2H18-OCOO-C4H18-O-	O-CaHIT-OCOO-C7HIA	X 85	S 150 I
	CHIT-OCOO-CHIZ-O-	-O-C ₂ H ₁ =OCOO-C ₂ H ₁₇	K 88	\$ 172 !
	Caritar CO-	-co-c ₂ H ₁₉	K 149.3	C 147.81
	C ¹⁰ H ⁵¹ -CO-	-co-c ₁₀ H ₂₁	K 141	5141
40	C ₆ H ₁₁ -CO-	-00C-C ₂ H ₁₁	K 87.5	E 91 B 111.5 A 1401
	c³+ı•∞-	-NHOC-C-H-	K 233	. \$ 225 I
	c346-00C-	-coo-c _e H _s	K114	xau
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	lœ i	: 8	L	10
S 112 L 118 I	K 86.5	-00C-C ₄ H ₆	CHF-OOC-	
	K 96	-00C-C.H.	CaHa-OOC-	
L 100 ()	K 59.6	-00C-C ₁ H ₀	C3H7-OOC-	
	K 80.3	-00C-C ₄ H ₀	Carrocc .	
S 63.4 L 64.9 A 74.4 I	K 49.7	-00C-C ₂ H ₀	CyH11-OOC-	
S 52.8 L 55.4 A 70.2 I	K 49.1	-00C-C-H-	CH12-OOC-	15
L 56.7 A 69.4 I	K47.3	-00C-C-H	C*H1E-OOC-	
L 52.8 A 66.8 I	K 50	-00C-C.H.	C'HIE-OOC-	
. B 80.5 A 85 (K 57	-00C-CHI	C ₇ H ₁₂ -OOC-	
B 76.5 A 79 I	K61.4	-00CCH	C_H17-00C-	
L523 A 66.8 I	K 52	-00C-H _M	CHID-OOC-	
B70.5 A 76 I	K 49	-000 C.M.	CHIT-ODC-	20
562A651	K 49.8	-00CC.H	CeH19-OOC-	
B484 A 51.81	K 68.4	-00C-C ₁ H ₀	C10H21-00C-	
A 60.2 I	K 55	-OOC-CHI	C19Hat-COC-	
- B 65 A 58 I	K 62.6	-00CCH1	CIPHI-OOC-	
B 77.5 A 61 I	K 59.5	-005 CH	C11H22-00C-	
A 62.5 I	X 49.6		C_H17-COO-	25
. A48.3 I	K 28		G ₂ H ₁₇ -COO-	20
P21.1 A 44.2 I	K7		C-H ₁₇ -COO-	
A 59.7 I		COOCH CHIMOCOL 1	C ₂ H ₁₈ -COO-	
. A 52.6 I		COOCH CHIMOCH, 1	C _e H _{te} -COO-	
F 28 A 50 I	K35.7		C.H1=COO-	
A44.41	K 53.7		C10H21-COO-	
A54.4 I		-000-CH-CHM-0-CH-1	C ₁₀ H ₂₁ -COO-	30
l' 32.1 A 49.8 I	K38.9	- • • • • • • • • • • • • • • • • • • •	C _{ttt} H ₂₁ -COO-	
A4631	K 47		G11Her-COO-	
A 50 I	K 47	7 7 1	C ₁₁ H ₂₂ CCO-	
A SB I	K 47.1		C11H22COO-	
A 48.4 I			Cultur-COO-	
A 60.4 I	K 58.2		, 1	35

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10	<u>L</u> .	. Al la	l LCI
10	CH3-COO-	-OOC-CH ₃ K 163	X </td
	C3H11-COO-	-00C-C ₆ H ₁₁ K 117	S 1181
	C ₆ H ₁₃ -COO-	-00C-C ₆ H ₁₂ K 105	S 118 I
	C7H15-COO-	-00C-C7H15 K 95	S 122 I
15	C ₈ H ₁₇ -COO-	-000-C ₂ H ₁₇ K95	S 121 /
15	C ₉ H ₁₉ -COO-	-00C-C ₀ H ₁₈ K 98	S 122 I
	C ₅ H ₁₁ -COO-	-00C-CHMe-CHMe-O-CH ₂ 1 K 47	C* 55 I
	C ₈ H ₁₃ -COO-	-OOC-CHMe-CHMe-O-CH ₂ 1 K 23	S 31 C 39 I
	C7H15-COO-	-OOC-CHMe-CHMe-O-CH ₂ 1 K 37	C* 451
20	CaH17-COO-	-OOC-CHMe-CHMe-O-CH ₂ 1 K 38	C* 471
20	C ₈ H ₁₇ -COO-	-00C-CHMe-CHMe-O-C4He 1 K 47	S 49 C 56 I
	CH2-0C00-	-0000-CH ₃ K 148	X<1
	C2H3-0C00-	-0C00-C ₂ H ₅ K96	X<1
	C ₄ H _g -COO-N=CMe-	-CMe=N-OOC-CaHe K111	A 121 I
25	CaH ₁₇ -COO-N≃CMa-	-CMe=N-OOC-C ₂ H ₁₇ K 104	A 132 I
25	CeH₁7-	-O-CHMe-CeH13 1 K?	
	C7H15	-OOC-CHMe-C2Hg 1 K 28.5	8 57.31
	CeH ₁₉ -O-	-C2H4-COO-CHM9-C6H12 1 K72.4	Nº 145.9 U
	C ₁₂ H ₂₆ -O-	-CO-CHMe-C ₃ H ₇ 2 K 47	A 49 I
30	CeH13-O-	-COO-CHMe-C2Hs 1 K 43	A 35 U
00	C ₆ H ₁₇ -O-	-COO-CHMe-C2Ha S K 64.5	C* 30 A 53 I
	C ₉ H ₁₈ -O-	-COO-CHMe-CeH13 1 K 7	C-1 N-1U
	C ₈ H ₁₇ -O-	-COO-CHMe-CH ₃ K 75	C41 A 69 I
	C ₈ H ₁₇ -O-	-COO-CHMe-C2H5 2 K 67	C 31 A 50 I
35	C ₆ H ₁₇ -O-	-COO-CHM+-C3H7 2 K 43	C 26 A 36 I
•	CoH17-O-	-COO-CHMe-C4He 2 K 49	A34E
	C ₆ H ₁₇ -O ₇	-COO-CHMa-C ₅ H ₁₁ 2 K 61	A 30 E
	C ₈ H ₁₇ -O-	-COO-CHMe-CeH ₁₃ 2 K 57	A 37 E
	C ₂ H ₁₇ -O-	-COO-CHMe-C7H15 2 K 61	A 37 E
40	C ₆ H ₁₃ -O-	-COO-CH ₂ -CHCI-CHMe-CH ₃ 1 K 46	C* 15 A 15 U

	L	RI ICr	L
10	CoH17-O-	-COO-CH2-CHCI-CHMa-CH3 1 K34	C* 34 A 54 I
10	CoHig-O-	-COO-CH_CHCI-CHMe-CH3 1 K 38	C* 44 A 58 I
	C10H21-O-	-COO-CH2-CHCI-CHM6-CH3 1 K 36	C* 45 A 58 I
	C11H23-O-	-COO-CH2-CHCI-CHM6-CH3 1 K 55	C* 49 A 60 I
15	C ₁₂ H ₂₅ -O-	-COO-CH2-CHCI-CHMe-CH3 1 K 52	C*47 A 81 I
	C ₁₃ H ₂₇ -O-	-COO-CH2-CHCI-CHMe-CH3 1 K 57	A 61 I
,,	CeH13-O-	COO-CH2-CHCI-CHMa-C2H6 3 K31	C* 10 A 40 I
	C7H15-O-	-COO-CHI-CHCI-CHM-CIH6 3 K75	C* 39 A 56 I
	CeH17-C-	-COO-CH2-CHCI-CHMa-C2Hs 3 K 15	S 16 C* 32 A 50 I
	CeH1e-O-	-COO-CH2-CHCI-CHMa-C2H3 3 K 27	C* 40 A 53 I
20	C10H21-O-	-COO-CH2-CHCI-CHMa-C2H4 3 K 39	C' 41 A 54 1
20	C ₁₁ H ₂₃ -O-	-COO-CH2-CHCI-CHMe-C2H5 3 K 35	C* 42 A 55 I
	C12H25-O-	-COO-CH2-CHCI-CHM6-C2H5 3 K 40	C* 43 A 57 I
-	C13H27-O	-COO-CH2-CHCI-CHMa-C2H6 3 K 45	- C- 47 A 80 1
	CeH17-O-	-COO-CHMe-COO-CHMe-CeH13 3 K 42	A 21 1
25	CaH17-O-	-OOC-CHMo-CaHe 1 K 89.4	C*84.41
	C10H21-O-	-OOC-CHMe-CaHa S K 74.8	H 75.8 C* 79.4 A 83.21
	C11H23-O-	-OOC-CHMe-C2H6 1 K 70	C* 721
	C12H25-O-	-OOC-CHMe-C2H6 1 K 68	C- 69 1
	C14H29-O-	OOC-CHMe-CaH6 1 K 84	A 81.4 I
30	C7H15-O-	-OOC-CHF-CHMa-CH3 S K 89	S 105 A 107 I
	CeH17-O-	-OOC-CHF-CHMe-CH3 S K 95	S 103 Nº 109 I
	C6H17-O-	-OOC-CHF-CHMe-C2H3 3 K?	C-71
	C10H21-O-	-OOC-CHF-CHMe-C2H6 3 K?	1
	C12H25-O-	-OOC-CHF-CHMe-C2H5 3 K 81	A721
<i>35</i>	C9H17-O-	-OOC-CHF-CHMa-CaHs 5 K 84	C' 86 A 94 I
	C12H25-O-	-OOC-CHF-CHMe-C2H3 5 K 71	C* 81 A 93 I
	CeH13-O-	-OOC-CHCI-CHMO-CH3 1 K?	G* 77.6 A 83.31
	C7H15-O-	-OOC-CHCI-CHMa-CH3 1 K 72	H 64 G' 71 C' 73 A 81.51
	CoH17-C-	-OOC-CHCI-CHMe-CH ₃ 1 K 76	S 66 C' 71 A 83 I

10	<u> L </u>	ล	Cr	LC)
	CaH17-COO-	-COO-CHMa-C ₃ H ₇	1 K 48.2	A 38.41
	C ₂ H ₁₇ -COO-	-COO-CHMe-CaHe	1 K 29.6	A 32.61
	C+H17-COO-	-COO-CHMe-C6H11	1 K 37	A 31.9 I
	C ₆ H ₁₇ -COO-	-COO-CHMe-CeH13	1 K 34.3	A 26.3 I
15	C ₆ H ₁₇ -COO-	-COO-CHMe-C7H15	1 K34	A 26 I
	C ₂ H ₁₂ -COO-	-COO-CHMe-C ₂ H ₅	F K 31.9	J" 21.1 C" 35.2 A 48.9 i
	C10H21-COO-	-COO-CHMe-C ₂ H ₅	F K 44.6	J" 31.1 C" 36.9 A 48.5 I
	G11H23-COO-	-COO-CHMe-C ₂ H ₅	F K 41.2	J* 38.8 C* 41.2 A 50.5 I
	C12H25-COO-	-COO-CHMe-C ₂ H ₅	F K 43.5	J' 41.3 A 50 I
20	C13H27-COO-	-COO-CHMe-C ₂ H ₅	F K 49.8	J" 48.7 A 52.7 1
	C ₆ H ₁₃ -COO-	-COO-CH2-CHCI-CHMa-CH3	1 K 46	C* 15 A 45 I
	C ₆ H ₁₇ -COO-	-COO-CHZ-CHCI-CHMe-CH3	1 K 37	I' 10 C' 40 A 54 I
	C+H19-COO-	-COO-CH2-CHCI-CHMe-CH3	1 K?	C. 31
	C10H21-COO-	-COO-CH2-CHCI-CHMa-CH3	1 K 38	C* 45 A 58 i
25	C9H15-COO-	-COO-CH2-CHCI-CHMe-C2H5	3 K 31	C* 10 A 40 I
	C ₈ H ₁₇ -COO-	-COO-CH2-CHCI-CHMe-C2H8	3 K 36	S 13 C* 36 A 49 I
	C10H21-COO-	-COO-CH2-CHCI-CHMe-C2H5	3 K 36	C* 41 A 52 I
	C ₀ H ₁₇ -COO-	-COO-CH2-CHCI-CHMe-C2H5	5 K 6	C- 37 A 47 I
	C ₈ H ₁₇ -COO-	-COO-CH2-CH(OMa)-CHMa-CH3	R K 25	S 10 C- 19 A 39 I
30	C ₀ H ₁₇ -COO-	-COO-CH ₂ -CH(OMe)-CHMe-C ₂ H ₅	3 K 35	C* 18 A 37 i
	CoH17-COO-	-OOC-CHCI-CHMe-CH3	1 K 86	S 85 C" 95 I
	C9H1E-COO-	-OOC-CHCI-CHMe-CH3	1 K 68	S 82 C* 91 A 92 I
	CeH13-COO-	-OOC-CHCI-CHMa-C2H5	3 K 38	S 51 C" 67 1
	C7H15-COO-	-OOC-CHCI-CHMe-C2H5	3 K7	C 71
35	C ₆ H ₁₇ -COO-	-OOC-CHCI-CHMe-C2H5	3 K 41	S 49 C* 71 1
	C10H21-COO-	-OOC-CHCI-CHMB-C2H5	3 K 48	S 53 C' 80 I
	CPH12-COO-		3 K 53	S 49 t
	C.H17-COO-		3 K 48	S 46 C* 53
	C9H19-COO-	-OCOO-CH2-CHCI-CHMa-C2H5	3 K 54	S 54 C* 58 I
40	CeH17-0C00-	-CO-CHMe-C2H3	1 1	A 41.61

10	<u>L</u>	RI	1	cr	
	CH3-OCOO-	-COO-CHMe-CeH12	1		ıc
	C ₂ H ₁₉ -OCOO-	-COO-CH2-CHCI-CHMe-CH3	1		1
	C9H19-OCOO-	-OOC-CHCI-CHMe-CH ₂	1	K 50	C* 36 I
	CeH17-OCOO-	-OOC-CHCI-CHMa-C2H4	3	1	1° 55 C° 58 1
15	C ₉ H ₁₉ -OCOO-	-OOC-CHCI-CHMe-C2H6			C* 29 A 41 I
	C*H12-OCOO-,	1		K 22	1° 27 C° 43 1
	C ₉ H ₁₉ -OCOO-	-OOC-CHCI-CHMe-C2H6			1° 25 C° 37 I
	CoH17-	-CO-CH=CH-COO-CH2-CHMa-CH3		K 68.5	1° 25 C° 39 I
	C7H18-	-OOC-CH2-CHMa-C2H3			. N431
20	CiH ₁₇ O-	-O-CH-CHME-CHIS			S 68.7 I S 83.7 H 86 I
	C10H21-O-	O-CHCHMe-C2Hs			H 78.3 C 80.3 I
	C12H25-O-	O.CH, CHMe.CoHe			6.73.9 H 77.4 C* 78.9 A 79.8 I
	C ₀ H ₁₇ -O-	-CO-CH ₂ -CHMe-C ₂ H ₅			C' 68.3 A 98.3 I
	C13H25-O-	-CO-CH ₂ -CHMe-C ₂ H ₅			A861
25	C4H4-O-	-COO-CH ₂ -CHMa-C ₂ H ₈			S 73.81
	C5H11-O-			K 57.5	. A 65.31
	CeH13-O-	-COO-CH ₂ -CHM=-C ₂ H ₆		K 48	A 661
	C7H18-O-	-COO-CH ₂ -CHMe-C ₂ H ₆			C* 43 A 64.21
	CeH17-C-	-COO-CH ₂ -CHMe-C ₂ H ₅			C' 44 A 85.91
30	CoH15-O-			K 60	C 38 A 64,41
	C10H21-O-	-COO-CH2-CHMe-C2H6			C' 41.2 A 66.2 I
	C11H22-O-			K 40	C 50 A 63 U
	C ₁₂ H ₂₅ -O-			K 53.2	C* 39 A 63.8 I
	C13H27-O-		-1	K 50	C* 51 A 64 U
35	C14H29-O-	·		K 61.1	A 61.71
	C6H13-O-		-1	K 36	C*4A301
	CaH17-O-	-COO-CH2-CHCI-CH2-CHM0-CH3	1	K 35	S 0 C 30 A 40 I
	CgH1g-O-	-COO-CH2-CHCI-CH2-CHMa-CH3	1		C* 35 A 45 i
40	C10H21-O-		-1		C*40 A 47 I
40	C11H23-O-	-COO-CH2-CHCI-CH2-CHMa-CH3	-		i i
	• 1		٦,		A471}

10	<u>JL</u>	R) IC	l LCI
	C ₁₂ H ₂₅ -O-	-COO-CH2-CHCI-CH2-CHMe-CH3 1 K 48	C 42 A 48 !
	CeH17-C-	OOC-CH2-CHMe-C2H4 S K 56.2	S91.8 C* 94.8 I
	C19H21-C-	-OOC-CH2-CHMa-C2H3 S K 85.7	H 63.4 C* 83.9 A 99.8 I
	C ₁₄ H ₂₉ -O-	-OOC-CH2-CHMa-C2H3 S K77.5	
15	C5H11-O-	-OOC-CHCI-CH ₂ -CHMe-CH ₂ 1 K?	E6291713A7451
	CeH12-O-	-OOC-CHCI-CH ₂ -CHMa-CH ₃ 1 K71	C 65 A 741
	C7H18-O-	-OOC-CHCI-CH_CHMa-CH_ 1 K 54	C* 57 A 67.51
	C _B H ₁₇ -O-	-OOC-CHCI-CH-CHM-CH- 1 K 64	C* 58.5 A 67 I
	CeH19-O-	-OOC-CHCI-CH ₂ -CHMe-CH ₂ 1 K 67	C" 54 A 56.5 I
20	C2H8-OOC-	-OOC-CHMs-O-CH2-CHMs-C2H3 3 K?	
	C7H15-COO-	-CH2-CHMa-C2H4 S K30	B 66 I
	C4H4+COO-	-O-CH2-CHMa-C2H3 S K86	B 85 I
	C ₉ H ₁₈ -COO-	-O-CH ₂ -CHMa-C ₂ H ₂ 1 K7	B 1171
	CPH13-COO-	-COO-CH2-CHIMO-C2H4 S K 22.4	C* 18.4 A 51.9 I
25	C7H18-COO-	-COO-CH2-CHM-C2H5 S K33.7	C*33.1 A 57.1 I
	C+H17-COO-	-COO-CH2-CHM-C2H6 S K35.9	C* 41.8 A 59.71
	C+H19-COO-	-COO-CH2-CHMa-C2H3 S K34.2	
	C10H21-COO-	-COO-CH2-CHMa-C2H3 S K 43.9	
	C11H22-COO-	-COO-CH2-CHMo-C2H3 S K 45	C 50.4 A 63.8 I
30	C12H25-COO-	-COO-CH2-CHMa-C2H5 S K41.2	C* 50.5 A 83.6 I
30	C ₁₉ H ₂₇ -COO	-COO-CH2-CHMa-C2H4 S K 52.9	
	C ₁₅ H ₃₁ -COO-	-COO-CH2-CHM+-C2H4 6 K 60.9	A 64.21
	C9H12-COO-	-COO-CH2-CHCI-CHM-CH3 1 K34	C-4A301
	C ₂ H ₁₇ -COO-	-COO-CH2-CHCI-CH3-CHM-CH3 1 K35	S 0 C* 30 A 40 I
	C ₁₀ H ₂₁ -COO-	-COO-CH2-CHCI-CHM-CH3 1 K 28	C- 40 A 46 1
35	C ₈ H ₁₇ -COO-	-COO-CH2-CH(OMe)-CH2-CHMe-CH2 1 K31.7	A 31.7 I
	C*H1=COO-	-COO-CH2-CH(OMe)-CH2-CHMe-CH3 1 K 38.2	A 37.2 I
	C ₁₀ H ₂₁ -COO-	-COO-CH2-CH(OMe)-CH2-CHMe-CH3 1 K 41.5	A 43.4 I
	C12H25-COO-	-COO-CH2-CH(OMe)-CH2-CHMe-CH3 1 K 51.7	A 39.8 E
	C ₈ H ₁₇ -COO-	-OOC-CHCI-CH ₂ -CHMe-CH ₃ 1 K 55	S 55 C* 68 A 70 1
40	•	- 411	1

$L \longrightarrow R$

	<u>L</u>		l lo	er j	LC
	CeHte-COO-	-00C-CHCI-CH-CHMe-CH ₂			9.55 C* 58.A.711
10	C _b H ₁₇ OCCO-	-CHI_CHIM-CHI	al,	(36.6	C' 24.5 N° 27 I
	C _e H ₁₂ OCCO.	-O-CH-CHM-CH			· C 451
	C ₆ H ₁₇ =OCOO-	OCH CHMOCH			C 47 N 48.51
	C*H**OCOO-	, , , , , , , , , , , , , , , , , , ,			C" 46 N" 49 I
	C ₂ H ₁₂ -OCCO-	-cocalacti-clineal		(20	1°22 C'341
	C _P H ₁₂ OCCO-	-occardate chine-ch			721C131
15	C ₇ H ₁₈ -O-	-CyHq-CHMo-CyHa			9 54 9 64.9 I
15	C.H.,-C-	-CHI-CHM-CH			5 57.9 H 62.5 C* 65.1 I
	C _e H ₁₉ ·O-			58.4	8 49.9 H 59 C* 62.7 A 63.5 I
	CuHen-C-	CH-CHIA-CH			· 951 H 53.6 C* 56.9 A 62.9 I
	C ₁₅ H ₂₅ -C-	COCH CHICAL		96	•
	CaH17-O-	-coocat-came-cat			ICTA
	C ₂ H ₁₉ -C-	COOCH-CHIN-CH			G* 58 A 72 I
20	Cuffero		1 1		SECBATU
	CHITO	COCCHICHMENT	1 "		853 C 67 A741
	CeHtr-CO-	-OCCCH-CHIM-CH			G* 62.5 A 63.1
	CHIFCO.	OCCH CHUCH			A 112 U)
	Cetter-O-	COOCH CHICH			8 66 C' 90 A 1142 U
	CHIP-O-		1 8		G*62.2 A 68.1
<i>2</i> 5	CHIPO-	COO-CHI-CHINE-CHI-CHINE-CH			C* 48 A 58 I
	Culturo.	-coo-cht-chine-cht-chine-ch			A 54 1
	CHIS-COO.	-coocht-amecht-ameai			C* 47 A 53 I
	C_H17-COO-			36.6	B 41.3 A 66.7 I
	C ₂ H ₁₂ -COO-		- T ''		J 38.5 C 43.9 A 55 i
	Csettar-COO.	-COO-Cyth-CHMo-Cyth-CHMo-CHg		40.9	J 39.8 C*51.5 A 56.4 [
30	C11H22-COO-				J* 42.9 C* 53.8 A 50.9 I
-	CuHz-COO-	-COO-C-H-CHM-C-H-CHM-CHJ	9.		J* 46.5 C* 55.9 A 56.5 (
	Chotter			57,8	A 55.51
	CioHar	1	2 K		C e0.51
	A10.01	-O-CyHye-CHMe-CyHy	21 K	26.5 i	Cesci

$$L$$
 R

10	ic i	. Ri	1	0- 1	
	C ₀ H ₁₇ -O-	-OOC-CHF-C ₆ H ₁₃		Cr K?	
	CeH11-O-	-00C-CHCI-C ₂ H ₈			C. 31
	CeH13-O-	-00C-CHCI-C ² H ²			G* 107 l
	CyH15-O-			K 98	H 87 G* 103 A 107 I
15	CaH17-O-	-00C-CHCI-C ₂ H ₃			H 80 G* 83 F* 96 A 104 I
	CaH1a-O-	-00C-CHCI-C ₂ H ₄		K 98	H 71 G* 91 F* 95 A 104 I
	CoH1s-O-	3		K?	Q. <3 I
	C ₁₀ H ₂₁ -O-	-00C-CHCI-C ₂ H ₆			G' 85 F' 96 A 102.5 I
	C12H22-O-	-00C-CHCI-C ₂ H ₆			G* 82 F* 95 A 101 I
20	C ₂ H ₁₈ -COO-	-00C-CHCI-C ₂ H ₅		K 96	G* 74 F* 95 A 100 I
	CaH17-OCOO-	-00C-CHCI-C ₂ H ₅			S 132 I
	C ₂ H ₁₇ -	-00C-CHCI-C ₂ H ₆			1° 70 C° 80 I
	C ₅ H ₁₁ -O-	-coo-chiz-chci-chiz			A341
	CsH13-O-	-coo-cHz-cHci-cHa	- 1		A 92.5 I
25	C ₇ H ₁₅ -O-	-coo-ch ₂ -chc-ch ₃		1	A 86.4 I
	G ₆ H ₁₇ -O-	-coo-ch2-chc3-ch3			A 86.7 1
	CeHterO-	-coo-ch _z -chcl-ch ₃			A 86,2 (
	CioHai-O-	-coo-chcha-ch-		1	A 86.7 I
	1 1	-coo-ch ₂ -chci-ch ₃			A 87 I
30	C12H25-O-	-coo-cH2-cHCI-CH3			A 86.1 I
	C ₁₀ H ₂₁ -O-	-OOC-CH2-CHCI-CH3			S 95 S 108 I
	C ₆ H ₁₇ -COO-	-coo-chz-chci-cha			E 30.5 B 69.7 A 90.2 I
	C ₀ H ₁₇ -COO-	-COO-CH2-CHCI-C2H3	- 1		C* 22 A 58 I
	C ₉ H ₁₉ -COO-	COO-CH2-CHCI-CH3			A 60 I
35	C ₆ H ₁₇ -COO-	-coo-c2H1-CHCI-CH3	S	K 50.4	J* 53.2 * 53.2 A 65
	CaH18-COO-	-COO-C3H4-CHCI-CH3			J* 57.4 A 67.5 I
	C10H21-COO-	-coo-c3H1-cHCl-cH3	s	K 58.4	J° 60.3 A 68.2 I
	C11H22-COO-	-COO-C2H4-CHCI-CH3			J* 63.7 A 69.3 I
	C ₁₃ H ₂₇ -COO-	-COO-C3H4-CHCI-CH2	s	K 70.6	A 69.6 I
40	C4He-O-	-со-снв-сн			A 103 I
	C5H11-O-	-CO-CHBr-CH ₃	2	K 91	A 99 I

r.—//				– R
	/	_	/	

	<u> </u>		<u>L</u> I	Cr	LC
10	C ₆ H ₁₃ -O-	-CO-CH8r-CH ₃	2	K 85	A 99 I
	C7H13-O-	-CO-CHBr-CH ₃	2	K 78	A 103 I
	C ₀ H ₁₇ -O-	-CO-CHBr-CH ₃	2	K 84	A 103 I
	C9H19-O-	-со-снвсн	2	K 80	A 103 I
	C10H21-O-	-со-снв-сн	2	K71	A 103 I
15	C ₁₂ H ₂₅ -O-	-CO-CHBr-C ₃ H ₇	2	K 95	A 78 I
	C₃H ₇ -	-CF ₃		K 97	N-60 E
	C₃H ₇ -	-O-CF ₃		K 92	N-60 E
	C ₅ H ₁₁ -	-S-CF ₃		K 31	N-80 E
	C6H11-	-O-CH ₂ -CF ₃		K 107	N-30 E
20	C ₆ H ₁₁ -	-co ₋ cF ₃		_K_13	N-40.E
	C ₄ H ₀ -O-	-C ₆ F ₁₃		K 88	. S 104 I
	C7H15-O-	-CF ₃		K 69	B 114.51
	CHIPO.	-CF3		'K'115	N-20 E
	C4Hg-O-	-S-CF ₃	Н	K 82	N-40 E
25	C ₉ H ₁₇ -O-	-COO-CH ₂ -C ₆ F ₁₃		K 85	C 109 A 1191
	C ₈ H ₁₇ -O-	-COO-C2H4-C4F9		K 108	C 1121
	C ₈ H ₁₇ -O-	-COO-C ₂ H ₄ -C ₆ F ₁₃	Н	K114	C 125 A 127 I
	C ₆ H ₁₇ -O	-COO-C ₂ H ₄ -C ₆ F ₁₇		K 122	C 132 A 141 I
	C ₉ H ₁₇ -O-	-COO-C ₂ H ₄ -C ₁₀ F ₂₁	ÌÌ	K 141	A 152 I
30	CH ₃ -NH-	-C ₆ F ₁₃		K 142	S 168 I
	C ₂ H ₅ -NH-	-C ₆ F ₁₃	Н	K 122	S 174 I
	C3H7-NH-	-C ₆ F ₁₃	1	K110	S 134 I
	C ₄ H ₈ -NH-	-CaFr	H	K 117	S 123 I
	C ₄ H _g -NH-	-C ₆ F ₁₃		K 107	S 145 I
<i>3</i> 5	C ₅ H ₁₁ -NH-	-C ₃ F ₇	١١	K 108	S 111 I
	C ₈ H ₁₁ -NH-	-C ₆ F ₁₃		K 108	S 133 I
	C ₈ H ₁₇ -NH-	-C ₀ F ₁₃		K 115	S 113 I
	C ₈ H ₁₇ -OOC-	-O-C2H4-C0F13		K 7	CTATI
	C ₉ H ₁₈ -COO-	-CF ₃		K 63.3	E 74 B 108.3 I
40	•	•	• '	•	' .

 $L \longrightarrow R$

<u>L</u>		•	i cr	L	
CH+CHM+CH+CHC+COC+	-O-CH ₂ -C ₁ F ₁₂	1	K88	ASAI	
Carte-Carne-Carte-Ca-	-0-C11H22-COC-CH=CH2	s	K 62	AGOI	
C ₂ H ₂ -CHMe-CH ₂ -OOC-	-0 CH1+0 CH-CH-			C-302A5131	
CHI-CHM-CH-COC	OCH-OCCH-CH			A491	
C3H4-CHM4-CH2-COC-	OCHI-OOCGI-CH	1		C" 13 A 36 I	
C*H*-CHM+-CH*-COC-	0 Cult 00C-01-01.	_	1	C 42 A 64 1	
CHI-CHM-CHI-COC-	-0-C13H24-00C-C31=C314	_		A45.71	
CH-CHM-CH-COC	-oc-H			C' 29 A 63 i	
CaHe-CHMe-CHCOC-	-000-CH14-CH-CH2			C 41.7 A 2 I	
C _e H _e -CHF-CCO-	-OOCCHECH			8 162 1 8 167 1	
CHI-CHF-COO	-00C-CHF-C-H-			3 tar.s.i	
CHISCHF-CH-CO	-O-C.H. C.F.			S 47 S 87 S 91 S 97 C* 112 A 130 !	
CH-CHC-COO-	-00CCHG-CH				
CHLCHG-COO-	-000-CHG-C.H.			\$ 162.4 \$ 163.3 [
CH-CHCI-COO-	OCH-CH-CH			983 \$ 102.21	
CH_CHCI-COO-	OCH CH-CH-			E112.58 1181	
CaFir-CitHza-O-	-coo-ch-cf-		K95	A 106 I	
CuFir-CiiHar-O-	-coo-city-c _i F ₁₈		K 103	982 A 113 I	
H-C-CH-CH-OOC-CH-O-	= - 101		K78	C 1151	
HC-CHC+L-O-	-coochillocal-cardi	1		• •	
C ₂ H ₁₁ -C ₂ :C ₂	-och-aran		K 51.2	8 11951	
C ₂ H ₁ ₁ C=C ₂	-C=C-CH _{II}		K 67.5	8 86 1	
Oh HE COM	· -CC-C ₇ H ₁₆		K?	8731	

	<u> L </u>	R[[Cr	LC
10	CH-COC-	-O-C-H1#CH=CH-	K 95	E 1161
	CH2OOC-	-000-044-64-64-64-	K #2	1
	C3H3-OOC-CHM0-OOC-	-O-CiHia-CH=CH-	1 K 48	A 39 U
	C ₂ H ₁₅ O-	-O-C _e H ₁₈ -CH=CH ₂	K 102	S 102 S 105 I
	C ₆ H ₁₁ -	H2=2-H	K 56.4	8 82.7 1
	C ₆ H ₁₁ -	-C:::C-CH ₂	K 60.5	883.41
15	CH2-O-	12Hg-3-2::3-200-	K 54	N as !
15	CH-O-	-0-C+H1F-00C-CH(-CH-C=C-H)F	K 75	S 106 I
	orto	H35345300	K 92	N 68.1 I
	· Tareo	-000-C#H#C=:CH	K76.7	N 85.61
	C2H2-CHM2-CHF-CH2-COC-		3 K 48.5	\$32 C 34.7 A 54.3 I
	C*H*CHW+CHC+CH*COC-		3 K 58.2	j i
	Chf aim aia aif ooc	-ochiroch-cit	3 K 40	C 26.5 A 55 I
.20	chit com coccot coc	-ochirochar)	8 K 29	-G-7.651.31
	CTFCHIMPCHCICAFOOC	-0-G ₁₁ H ₂₂ -0-GH=GH ₂	3 K 41.9	. C 21 A 38.3 I
	C ₂ H ₁₃ -CHMo-O-	-o-al-al-al-	1 K77	9 48 1
	C*H*CHM+CHC-CCC-	oal,al-al,		
	CPH - CHM - CHC - CCC -	-0-C ₂ H ₁₂ -CH=CH ₂		C35A511
	CaHe-CHICHCOC-	-O-C_H1=CH=CH2		C'33A521
25	CPH-CHM-CHCI-COO-	-O-C _P H1=-CH- _C		C 48 A 50 I
	CaHe-CHMe-CHa-	-COO-CH-CHIMA-C ₂ H ₄	1	N-70E
	C ₂ H ₁ -CHM+-CH ₂ -		1 K72	A 101 I
	CiHi CHM CH O	-000-01-0-	1 K7	H96 A 115 I

$$L \longrightarrow R$$

10 R Cr C3Hr	N -30 E N -70 E
1	
1-2-7	1
GH18SO-CF2H 2 K72	N-70 E
C ₇ H ₁₆ -	N-110E
15 C ₆ H ₁₇ OO-CF ₂ H K 104	N 20 E
C ₀ H ₁₇ -OCOO-CHCF ₃ -C ₀ H ₁₃ 1 K 45.5	1
C ₆ H ₁₇ -OCOOOOC-CH ₂ -CHCF ₃ -C ₄ H ₉ 1 K?	S 5 S 25 1
CoH17-0COO-C2H4-CHCF3-C4H6 1 K 42	A 35 I
C ₄ H ₁₁ - -CH ₄ CH ₂ K 122	N 51.5 U
20 C ₂ H ₁₇ -OOC-CH=CH-C ₂ H ₁₁ K 36	E 59 B 66 N 75 I
CH3-O- CH-CH2 K 85	1 1
Cith-Ocoo-cith-ooc-cit-cith K?	\$ 551
C ₆ H ₁₇ -OOOC-C ₄ H ₆ -OOC-CH±CH ₂ - K 84.1	\$ 91.71
CeH17-O-	S 73.91
25 C ₂ H ₁₇ -O-CH ₂ -CH=CH-C ₂ H ₁₁ K75	E 931
CH2-OO-CaH12-O-CH2-CH2-CH2 K 101	N 98 I
C+H12-O-CH2-CH2-CH2 K 100	S 99 I
CH2-O	X 83 I
GAH-OOC-CHM-OOCO-CHO-CHCHCHCHCHCHCHCH-	A 20 I
30 CH-O K70	N 761
Cattle CHaCtta K?	B 26.3 I
C4He CHeCH2 K24.4	B 38.5 I
CaHe- CaHeCHa K 9.4	B 28.2 1
35 C4H2-CH=CH2 K-24.	B 42.41
CH3-OO-C ₆ H ₁₂ -CH=CH ₂ K 96	E 1081
CoH15-OO-CoH12-CH=CH2 K 113	\$ 1121
CH2-OOCO-C ₆ H12-CH=CH2 K 103	E 123 S 127 I
CH3-OO-C8H18-CH=CH2 K81	E 108 I
40 CH3-0OOC-C ₆ H ₁₈ -CH=CH ₂ K75	N 79 I

[0016] The liquid crystalline charge transfer materials of the present invention are useful for a variety of applications such as optical sensors, electro-luminescent elements, photoconductors, spacial optical modulators and thin-film transistors.

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[0017] The liquid crystalline charge transfer materials of the present invention can attain high mobility of electric charges, and prevent the formation of structural traps. Therefore, optical sensors having high-speed responsibility can be mentioned as a primary application of these materials. Secondarily, the materials of the present invention are excellent in charge transferability, and they themselves are fluorescent, so that they can be used for charge transfer layers in electro-luminescent elements which can be produced with the mobility maintaining high. Moreover; the materials of the invention are such that orientation in an electric field and photoconductivity can be switched at the same time. Therefore, they can be used for image-displaying elements.

[0018] Figs. 1 to 4 are views for illustrating typical examples of the application of the charge transfer materials of the present invention to electro-luminescent elements. The simplest structure of the elements is shown in Fig. 1, in which a luminescent layer (charge transfer layer) 10, 14 is formed as a single layer; and sandwiched between a cathode

(transparent electrode) 13 provided on a transparent substrate 15' and an anode 13' provided on a substrate 15. Reference numeral 16 indicates a spacer. Only when the charge transfer material has both charge transferability and fluorescence like the liquid crystalline charge transfer materials of the present invention, it is possible to produce an electroluminescent element having the above structure. In this case, in order to obtain strong luminescence, it is preferable that a material having a low work function be selected as a material for forming the cathode which acts as an electron injector and that a material having a work function which is equal to or greater than the work function of the cathode be selected for forming the anode.

[0019] Examples of materials for forming the anode generally include ITO, indium oxide, tin oxide (doped with antimony, arsenic, or fluorine), Cd₂SnO₄, zinc oxide, copper iodide, alkaline or alkaline earth metals such as sodium, potassium, magnesium and lithium, sodium-potassium alloys, magnesium-indium alloys, magnesium-silver alloys, aluminum, gold, silver, gallium, indium and copper, and those materials which are used for forming the cathode.

[0020] A material for forming the luminescent layer or charge transfer layer is composed of a charge transfer material and a luminescent material. The charge transfer material is preferably an electron-hole transfer material, a mixture of electron-hole transfer materials, or a mixture of an electron transfer material and a hole transfer material. However, in the case where luminescence at the surface of the electrode is utilized, a material which transfers only electrons or holes may also be used. Since the charge transfer materials of the present invention themselves are fluorescent, it is not necessary to use any luminescent material in the present invention; however, such a material may also be used along with the materials of the invention.

[0021] Further, in the case of an electro-luminescent element having a structure as shown in Fig. 3 or 4, the thickness of a luminescent layer (luminescent material) 10 is so made that the transfer of electrons or holes will not be impeded. The thickness of the luminescent layer is preferably from 0.2 to 15 µm; and it can be adjusted by scattering spacer particles in the luminescent material, or by a sealer to be provided around the periphery of the cell.

[0022] Figs. 5 to 7 are views for illustrating typical examples of the application of the charge transfer materials of the present invention to optical sensors. An optical sensor is composed of electrodes 13, 13', and a liquid crystalline charge transfer material 14 of the present invention. For optical sensors, such a property that the value of electric current changes when light is applied to the charge transfer materials can be utilized.

[0023] Fig. 8 is a view for illustrating a typical example of the application of the charge transfer materials of the present invention to image-displaying elements. An image-displaying element is composed of a transparent substrate 15 such as a glass plate, a transparent electrode 13 made from ITO (indium titanium oxide) or the like, a charge-generating layer 14' which generates carriers correspondingly to light applied to this layer, a liquid crystalline charge transfer material 14 of the present invention and a counter electrode (gold electrode) 13', which are successively laminated in the mentioned order. When light is applied image-wise (input image) to the lower part (transparent substrate) of the element, molecules in the liquid crystalline charge transfer material are oriented correspondingly to the light applied, and carriers flow toward the counter electrode (gold electrode) 13'. By optically reading this orientation of molecules in the liquid crystal, the input image can be reproduced. If the above liquid crystal is highly smectic, the orientation of molecules in the liquid crystal is maintained for a long time, and the input information can thus be maintained for a long time.

[0024] Fig. 9 is a view for illustrating an example of the application of the liquid crystalline charge transfer materials of the present invention to a charge transfer layer 14 in an image-recording device. While applying voltage to upper and lower electrodes 13 and 13' as shown in Fig. 9, light is applied pattern-wise to the upper part of the device. In a charge-generating layer 14', carriers are generated pattern-wise; and charges transferred by the charge transfer layer 14 are discharged in the space 19, and reach the surface of an information-recording layer 11.

[0025] The information-recording layer is a liquid crystal-polymer composite layer consisting of a smectic liquid crystal and a polymer. Molecules in the liquid crystal are oriented pattern-wise by an electric field produced by accumulated charges, and accumulated. Optical reading can thus be conducted.

[0026] Fig. 10 also shows an information-recording device. Application of voltage and that of light are conducted in the same manner as in the case of the information-recording device shown in Fig. 9. Charges generated (image) are accumulated on the upper surface of a dielectric layer 20, and optical reading can thus be conducted.

[0027] Further; the liquid crystalline charge transfer materials of the present invention can also be used for a spacial optical modulator as schematically shown in Fig. 11. Moreover, they can also be used as an active layer in a thin-film transistor. For example, as shown in Fig. 12, the above-described liquid crystalline material can be used by providing it on a substrate on which a source electrode, a drain electrode and a gate electrode have been arranged.

[0028] The present invention will now be explained more specifically by referring to the following Examples. However, the present invention is not limited by these examples.

55 Example A1

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[0029] 4-Heptyloxybiphenylcarbonic acid (manufactured by Teikoku Chemical Industries Co., Ltd., Japan) and 7-hydroxy-4-methylcumarin (synthesized in accordance with the description in *J. Chem. Soc. Chem. Commun.*, (2) 225-

226, 1995) were dissolved in 4-pyridinyl phenol, and dehydration condensation was then carried out at 90°C by using 1,3-dicyclohexylcarbodiimide to synthesize 7-hydroxy-6-(4-heptyloxybiphenylcarboxy)-4-methylcumarin.

Example A2

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[0030] Two glass substrates, each having thereon an ITO electrode (surface resistance: 100 to 200 Ω/□) formed by means of vacuum deposition were bonded with the ITO electrodes facing each other; a gap being provided between the substrates by using spacer particles, thereby obtaining a cell. Into this cell, the 7-hydroxy-6-(4-heptyloxybiphenyl-carboxy)-4-methylcumarin obtained in Example A1 was injected under the condition of 110°C. When a direct current electric field of 250 V was applied to this cell, luminescence originating from the above compound was observed.

Example A3

[0031] A glass substrate on which an ITO electrode (surface resistance: 100 to 200 Ω/□) had been provided by means of vacuum deposition, and a glass substrate on which an Ag electrode (specific resistance: 1 Ω/cm or less) film thickness: 3,000 Å) had been provided were bonded with the electrodes facing each other, a gap being provided between the substrates by using spacer particles, thereby obtaining a cell. Into this cell, a liquid crystalline material which was the compound obtained in Example A1 was injected under the condition of 11°C. When a direct current electric field of 250 V was applied to this cell in a dark room, luminescence originating from the above liquid crystalline material was observed.

Example A4

[0032] A cell having the structure shown in Fig. 2 was made by using a liquid crystalline material which was the compound obtained in Example A1, where the liquid crystalline material was injected into the cell under the condition of 110°C. When a direct current electric field of 250 V was applied to this cell in a dark room, luminescence originating from the above liquid crystalline material was observed.

Example A5

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[0033] A cell having the structure shown in Fig. 3 was made by using a liquid crystalline material which was the compound obtained in Example A1, where the liquid crystalline material was injected into the cell under the condition of 110°C. When a direct current electric field of 250 V was applied to this cell in a dark room, luminescence originating from the above liquid crystalline material was observed.

Example A6

[0034] A cell having the structure shown in Fig. 4 was made by using a liquid crystalline material which was the compound obtained in Example A1, where the liquid crystalline material was injected into the cell under the condition of 110°C. When a direct current electric field of 250 V was applied to this cell in a dark room, luminescence originating from the above liquid crystalline material was observed.

Example B1

45 [0035] Two glass substrates, each having thereon an ITO electrode (surface resistance: 100 to 200 Ω/□) formed by means of vacuum deposition were bonded with the ITO electrodes facing each other, a gap being provided between the substrates by using spacer particles, thereby obtaining a cell. Into this cell, benzthiazole liquid crystal (2-(4'-heptyloxy-phenyl)-6-dodecylbenzothiazole, Crystal-90°C-SmA-100°C-lso.) was injected under the condition of 110°C. When a direct current electric field of 250 V was applied to this cell, luminescence originating from the above compound was observed.

Example B2

[0036] A glass substrate on which an ITO electrode (surface resistance: 100 to 200 Ω/□) had been provided by means of vacuum deposition, and a glass substrate on which an Ag electrode (specific resistance: 1 □/cm or less, film thickness: 3,000 Å) had been provided were bonded with the electrodes facing each other, a gap being provided between the substrates by using spacer particles, thereby obtaining a cell. Into this cell, a liquid crystalline material which was the compound obtained in Example B1 was injected under the condition of 110°C. When a direct current electric field

of 250 V was applied to this cell in a dark room, luminescence originating from the above liquid crystalline material was observed.

Example B3

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[0037] A cell having the structure shown in Fig. 2 was made by using a liquid crystalline material which was the compound obtained in Example B1, where the liquid crystalline material was injected into the cell under the condition of 110°C. When a direct current electric field of 250 V was applied to this cell in a dark room, luminescence originating from the above liquid crystalline material was observed.

Example B4

[0038] A cell having the structure shown in Fig. 3 was made by using a liquid crystalline material which was the compound obtained in Example B1, where the liquid crystalline material was injected into the cell under the condition of 110°C. When a direct current electric field of 250 V was applied to this cell in a dark room, luminescence originating from the above liquid crystalline material was observed.

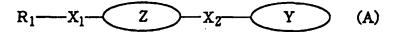
Example B5

[0039] A cell having the structure shown in Fig. 4 was made by using a liquid crystalline material which was the compound obtained in Example B1, where the liquid crystalline material was injected into the cell under the condition of 110°C. When a direct current electric field of 250 V was applied to this cell in a dark room, luminescence originating from the above liquid crystalline material was observed.

25 Claims

30

1. A liquid crystalline charge transfer material having the following structure (A) containing a fluorescent skeletal structure Y, and the core Z of a liquid crystal:



- in which R₁, which may directly be combined with Z without interposing X₁, represents a saturated or unsaturated, and linear, branched or cyclic hydrocarbon group having 1 to 22 carbon atoms; and X₁ and X₂ represent oxygen atom, sulfur atom, or -CO-, -COO-, -N=CH-, -CONH-, -NHCO- or -CH₂- group.
- 2. The liquid crystalline charge transfer material according to claim 1, wherein Z has a structure represented by Z₁ or Z₁-Z₂-Z₃, in which Z₁ and Z₃ are (6π electron system aromatic ring)_n (10π electron system aromatic ring)_m or (14π electron system aromatic ring)_n (where I, m and n are an integer of 0 to 4, provided that I + m + n = I to 4), and Z₂ is -CH=CH-, -C=C-, -N=N-, -CH=N- or -COO- group, or Z₁ and Z₃ are directly combined with each other.
- 3. The liquid crystalline charge transfer material according to claim 1 or 2, wherein Y is selected from radicals of metal chelate compounds, polycyclically condensed or conjugated aromatic hydrocarbons, diphenylethylene derivatives, triphenylamine derivatives, diaminocarbazole derivatives, bisstyryl derivatives, benzothiazole derivatives, azole derivatives, aromatic diamine derivatives, quinacridone compounds, perylene compounds, oxadiazole derivatives, cumarin compounds and anthracene derivatives.
- 50 4. An electro-luminescent element containing in its driving path at least one material set forth in any one of claims 1 to 3.
 - 5. All electro-luminescent element whose charge transfer part and luminescent part are made from at least one material set forth in any one of claims 1 to 3.
 - An electro-luminescent element which contains in its driving path at least one material set forth in any one of claims
 to 3 and whose charge transfer part and luminescent part are composed of a single layer.

- 7. All optical sensor containing in its driving path at least one material set forth in any one of claims 1 to 3.
- 8. A photoconductor containing in its driving path at least one material set forth in any one of claims 1 to 3.
- 5 9. An image-displaying element containing in its driving path at least one material set forth in any one of claims 1 to 3.
 - A spacial optical modulator containing in its driving path at least one material set forth in any one of claims 1 to 3.
 - 11. A thin-film transistor containing in its driving path at least one material set forth in any one of claims 1 to 3.
 - 12. A liquid crystalline charge transfer material having the following skeletal structure (B) containing the fluorescent core Y of a liquid crystal:

$$R_1 - X_1 - Y - X_2 - R_2$$
 (B)

- in which R_1 and R_2 , which may directly be combined with Y without interposing X_1 and X_2 , each represent a saturated or unsaturated, and linear, branched or cyclic hydrocarbon group having 1 to 22 carbon atoms; and X_1 and X_2 represent oxygen atom, sulfur atom, or -CO-, -OCO-, -COO-, -N=CH-, -CONH-, -NH-, -NHCO- or CH₂- group.
- 13. The liquid crystalline charge transfer material according to claim 12, wherein Y is (6π electron system aromatic ring)_{II}, (10π electron system aromatic ring)_{II} or (14π electron system aromatic ring)_{II} (where I, m and n are an integer of 0 to 4, provided that I + m + n = 1 to 4), and the aromatic rings may be combined through -CH=CH-, -C=C-, -N=N-, -CH=N- or -COO- group.
- 14. The liquid crystalline charge transfer material according to claim 12, wherein Y is selected from radicals of metal chelate compounds, polycyclically condensed or conjugated aromatic hydrocarbons, diphenylethylene derivatives, triphenylamine derivatives, diaminocarbazole derivatives, bisstyryl derivatives, benzothiazole derivatives, benzothiazole derivatives, azole derivatives, aromatic diamine derivatives, quinacridone compounds, perylene compounds, oxadizole derivatives, cumarin compounds and anthracene derivatives.
- 15. An electro-luminescent element containing in its driving path at least one material set forth in any one of claims 12 to 14.
- 16. An electro-luminescent element whose charge transfer part and luminescent part are made from at least one material set forth in any one of claims 12 to 14.
- 40 17. An electro-luminescent element which contains in its driving path at least one material set forth in any one of claims 12 to 14 and whose charge transfer part and luminescent part are composed of a single layer.
 - 18. An optical sensor containing in its driving path at least one material set forth in any one of claims 12 to 14.
- 45 19. A photoconductor containing in its driving path at least one material set forth in any one of claims 12 to 14.
 - An image-displaying element containing in its driving path at least one material set forth in any one of claims 12 to 14.
- 50 21. A spacial optical modulator containing in its driving path at least one material set forth in my one of claims 12 to 14.
 - 22. A thin-film transistor containing in its driving path at least one material set forth in any one of claims 12 to 14.

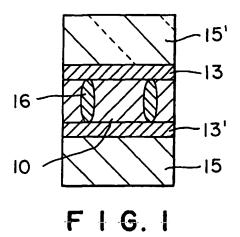
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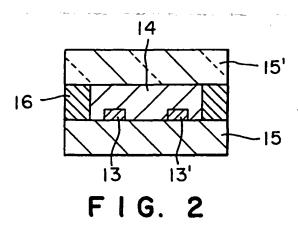
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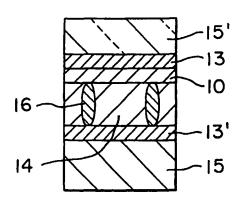
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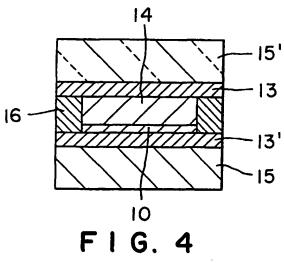
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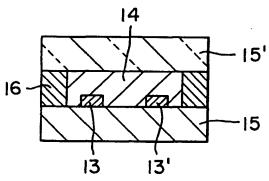






F I G. 3





F1G. 5

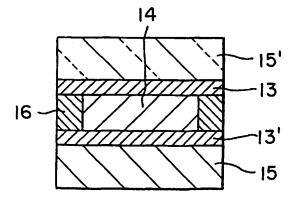


FIG. 6

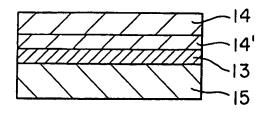


FIG. 7

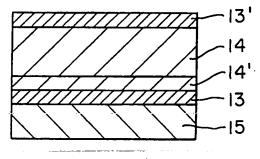
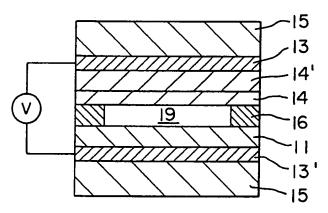


FIG. 8



F1G. 9

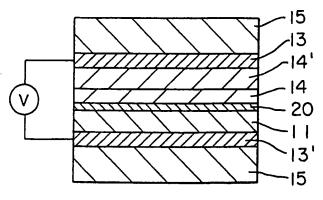
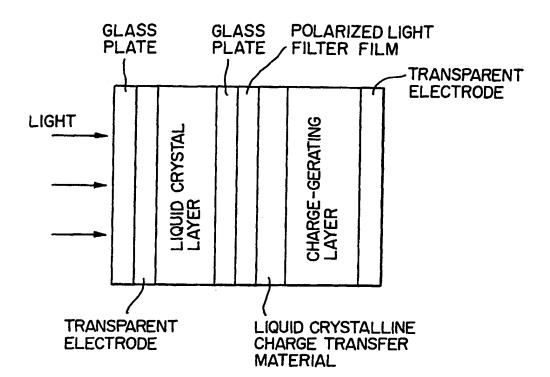


FIG. 10



F1G. 11

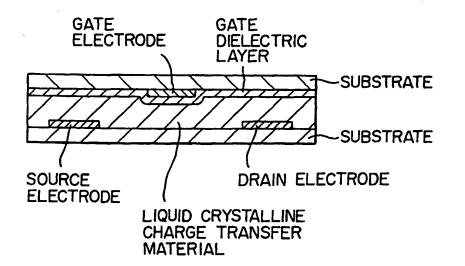


FIG. 12



EUROPEAN SEARCH REPORT

Application Number EP 98 12 0668

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	homologous series: 7-(4'-n-alkoxybenzos II. 4'-formylpher 7-n-alkoxycoumarin- MOLECULAR CRYSTALS	yloxy)-3-acetylcoumarin	1-22	
<u></u>	The present search report has	been drawn up tor all claims		
	Place of search	Date of completion of the search	<u>,</u>	Exeminer
•	THE HAGUE	18 December 1998		de, M
X : partic Y : partic docur A : techr	NTEGORY OF CITED DOCUMENTS cularly relevant if taken alone cularly relevant if combined with anot ment of the same category nological background written disclosure	E : earlier patent doc after the filing dat	tument, but publis e the application or other reasons	

EPO FORM 1503 03.82 (P04C01)



EUROPEAN SEARCH REPORT

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